

Educating for a Sane Society

**Proceedings of the conference held at Centre For Learning,
Bangalore**

December 2006

Centre For Learning is grateful to Wipro Applying Thought in Schools for
supporting our conference, Educating for A Sane Society

Contents

Introduction	5
Part 1: Talks and Discussions	7
CFL Presentation	9
Invited Talks	
Comments at Centre For Learning (His Excellency Sri Gopalkrishna Gandhi, Governor of West Bengal)	17
Reinventing Education for an Inclusive World (Prof Yash Pal)	28
Life Skills in the Curriculum (Dr Shekhar Seshadri, NIMHANS)	38
Some Questions Raised by Modern Life (Jayashree Nambiar, The School, KFI)	43
Dialogue in the Primary School (Anjali Noronha, Ekalavya)	47
NCF 2005: Vision and Perplexities (Rohit Dhankar, Digantar)	56
Vikasana (M C Malathi)	75
The Kanavu Experience (Shirley Joseph)	77
The Forest and the City: The Urgency of Change (Suprabha Seshan, Gurukula Botanical Sanctuary)	83
Small Group Dialogues	96
Part 2: Workshops	
Introduction to Workshops	108
Section One: General Workshops	
Dialogue in Education: CFL Teachers	109
Art in CFL: Radhika Neelakantan	122
Craft: Lalitha Manjunath	128
Role of the Body in Learning: Stefi Barna	139
Drama: Vijay Padaki	141
The Open Library: Usha Mukunda and Sunila Rau	142

Section Two: Workshops for Junior Age Groups

Junior Math: Arthi Saktheeswaran and Suseela Kumaravel	157
Circle Time: Suseela Kumaravel	185
Nature Journal: Suseela Kumaravel	188
Kannada Workshop: Leela Garady and Kavya Biradar	193
Toy Making: Vidula Mhaiskar	203

Section Three: Workshops for Middle and Senior Age Groups

Math for Middle School:	204
Shashidhar Jagadeeshan and Kamala Mukunda	
Three Strands of Mathematics Teaching: Shailesh A Shirali	234
Social Science Projects: Diba Siddiqi	237
Creative Writing - Old Words for New: Jane Sahi	245
Authentic Assessment: Keerthi L. Mukunda	252
Science - An Experimental Approach in the Classroom	275
Yasmin Jayathirtha	



Educating for a Sane Society

This document contains the talks, discussions and workshops shared during a unique five-day conference organized by Centre For Learning, Bangalore, in 2006. Our aim for the conference was to gather teachers and educators from all over India (and abroad) in order to dialogue about crucial areas of concern in education today. These areas included: curricula, dialogue, nature, assessment, school and teacher autonomy, and the emotional well-being of children. We felt that different voices and perspectives speaking together would generate a unique, inspirational energy. At the end of the entire process, thanks to the combined efforts of many, both within and outside CFL, we felt our dreams had been realized. Over 150 participants from schools both rural and urban, formal and non-formal, came together in a spirit of friendship and sustained enquiry.

The essential ideas that emerged from the conference can be organized into three widening circles of awareness: teacher growth, school environment and the social dimension. These, we feel, capture both the complexity and the promise of the change we desperately need in education. They emerged as we reflected upon the many insights that

arose during those five days, although the conference itself was not explicitly structured in this manner.

Thus the questions and observations presented below go well beyond specific contexts, into the broader field of education as a central element of personal and social change. As you read the rest of this document, we would like you to reflect upon these questions and ideas, considering their implications in your own contexts.

Teacher growth

- Teachers need opportunities and platforms to express themselves in many areas.
- They can question the educational systems they are a part of and become agents of change.
- They need to recognize that they are at the heart of educational work, and not merely ‘middlemen’ in educational transactions. They can move from feeling powerless to being powerful.
- Teachers from very different kinds of schools need to meet and realize the commonality of their purposes and intents.
- What is the scope of the possibilities when individual teachers change their approach and mindset?

School environment

- Schools can be cooperative ventures, allowing for non-hierarchical and consensual decision making, involving parents, teachers, administrators and students.
- Can this engender a feeling of community, from which responsible energy and action flow?
- In this way, the school becomes a vital centre of regeneration in society.

The social dimension

- What, if any, is the purpose of education in creating a 'sane' society?

- How do we view educational innovations within and outside the 'mainstream'? Upscaling can destroy quality, and yet 'islands of excellence' touch only a few.
- How can the State and private initiatives learn from and help each other?

The document consists of two parts. The first includes all invited talks, the subsequent question and answer sessions, and summaries of the small group discussions. The second part, titled 'From Philosophy to Practice', contains workshop material in several areas of practical teaching.



Part 1

Talks and Discussions



The contents or parts thereof may not be reproduced for any purpose without permission of the author or speaker.

CFL Presentation

Introductory remarks N Venu, CFL

We at Centre For Learning would like to introduce and explore some of the questions and themes that underpin our work. However, we will not present a history of CFL; nor will this be a detailed description of the work being done here. Where appropriate, those details will emerge in various discussions and workshops over the next few days.

We are aware that the educators who have come here do not all share the same background. Many work in contexts with unique constraints. I do not suggest that methods and structures from one context can be blindly cloned elsewhere. Still, there is much that can be fruitfully shared and talked about. This conference is an expression of the belief that such an interaction is vital; that in spite of differences, as educators, we share common ground and similar challenges.

I also wish to make clear that the issues and themes are being presented tentatively, in a spirit of dialogue, not as self-evident truths to be accepted without question.

The title of this conference indicates a concern with the social impact of education. Implicit in this is a criticism that much of what we

do in the name of educating is unsatisfactory. At one end of the spectrum large numbers of children have no access at all to quality education. At the other, even in the enclaves of the relatively privileged, learning has been reduced to a struggle for certification leading to a successful career.

The reference to a “sane society” may be puzzling or even provocative. Let me clarify. There is much unhappiness and incoherence at personal, social and global levels that seems resistant to long term solutions. CFL exists on the premise that these are all related; and that education can and must contribute to deeper understanding and change. I do not imply that this is easy or that the way forward is well-understood. Yet, we must begin and persist. This conference is an invitation for precisely that.

In exploring the possibilities of such an education, I would like to proceed by highlighting the following:

We must question both ends and means. Many of the goals of our education systems are implicit and unstated. They do exist as a background, all the same, and have powerful effects. Many of the methods and practices we adopt in our schools and classrooms flow from

these goals and have acquired a life of their own. Rigid school organization, excessive focus on rote, and examinations and curricula unresponsive to student needs are examples. We would like to question this focus on narrow goals and rigid methods.

Secondly, we need a vision of educating that is not merely schooling. Schooling as we know it is partly the result of history. It is too deeply entrenched in current social arrangements with their inequities and rigidity. There is pervasive bias in provision and access: gender, class and caste biases, for example.

In addition, schooling is increasingly seen merely as a passport to personal success. Surely, education must aim much beyond this and nurture a sense of responsible relationship to others. Thus we need to keep both the individual and the collective aspects of education firmly in mind. These are not in conflict. One without the other is limited.

Thirdly, such an education must contribute to individual and collective well-being. Well-being is a wider and richer notion than mere material success and personal accomplishment. It too has a collective dimension. An education that is socially aware needs to address both. A private heaven for the few is collective hell.

To summarise, I have outlined three strands in the re-examination of

our educational priorities. A willingness to question both goals and methods; exploring education as more than mere schooling; and a concern with well-being, personal and collective. These are not exclusive priorities. We will, hopefully, have the opportunity to explore these in some depth.

I now highlight three processes that support such an educational vision and nurture well-being. They have been at the core of CFL's work. For ease of presentation, we call them learning, co-operation and reflection. They are not arranged in a hierarchy. Nor are they isolated compartments.

Learning

Venkatesh Onkar, CFL

I'll begin with what learning means in its broadest and most general terms.

At the outset, I'd like to make the obvious distinction between 'learning' on the one hand and 'educational structures' or 'curricula' on the other. 'Learning' is a vast field that potentially encompasses all aspects of human life: the psychological, the cultural and the social. We are learning beings, participating collectively in this activity that has infinite dimensions. Educational structures and curricula, on the other hand, are historically specific. They interpret this field of learning according to their own purposes. Current educational systems come with their own set of assumptions and goals. It is

important for us to keep in mind that these systems are not permanent or inevitable. They have changed in the past and will doubtless change again in the future. As educators, it is important that we keep this in mind, that we do not take curricula as absolutes, but constantly evaluate them against the broader background of learning and human well being.

In the process of questioning present frameworks of schooling and the learning they offer, several issues come up.

Education as it is commonly conceived seldom engages children in interactive processes in their own contexts. In what ways are children actively engaged with the learning processes in their own lives? Curricula seem concerned with abstract content and information rather than meaningful engagement.

On a similar note: is 'learning' in this context just a passive consumption of messages and information? In other words, are curricula authoritarian and power driven? Current educational frameworks tend not to encourage questioning; instead, they emphasize messages and concepts that seem beneficial but which are problematic if we examine them more closely. An example is the use of national curricula to build the concept of 'nationhood.'

A powerful prevailing feature of conventional curricula is the fact that

ideas are severely compartmentalized into watertight disciplines. It is not clear what the advantages of such watertight compartments are. We must question the relevance of these distinctions that serve to remove the discipline from the child's life rather than integrate the two.

At quite another level, we may ask, why does schooling emphasize external rewards, such as certification, marks and prizes, to such an extent? Is learning meaningful when driven almost entirely by external rewards, regardless of psychological impact and costs? Internal intrinsic motivation does play a tremendous role too.

Finally: are these educational models merely training the young to fit into society? Education offers the learning of a set of skills that will allow young people to earn a livelihood and support themselves, and obviously this is necessary and right. But does it allow a radical questioning of society and the reasons for social inequality, or does it perpetuate these inequalities?

If the questions and problems I have raised are valid, what are our options and alternatives? A lot of the work we do at CFL is our response to these doubts I have brought up.

It is clear to us that learning must begin with a quality of scepticism. The beauty and power of this approach lies in the fact that we can be sceptical and investigative about every area in our lives. A child can investigate the natural

world and the social world; she can equally investigate her own psyche and learn about her relationships in all their complexity. Such learning is open-ended and non-prescriptive. The emphasis is on learning, doubting and questioning, not on content to be mastered or skills to be acquired.

A central feature of such an approach is the creation of an atmosphere of non hierarchical learning. It is important that learning is not passive and that knowledge is not used as a means to power. Children can be encouraged to question, to doubt and to challenge. This kind of questioning cannot obviously be restricted to within a classroom; once the process of scepticism is unleashed, it must encompass many dimensions of life. However, creating and sustaining such an atmosphere can never be taken for granted. It will inevitably take a great deal of commitment from parents, teachers and children. We need collectively, as a society, to realize the potential of this approach.

Other features might emerge from these ideas. Observation and attention to natural processes and the beauty of the natural world is an important feature, right from a young age. Context-based academic learning is important, with an emphasis on understanding and analysis rather than mere rote and memorization. We need to encourage children to gain an

understanding of the incredible complexity of our social world and all the subtle forces at work in it. A balance between intellectual work and work with the hands, between text oriented study and studying the 'real' world first hand, is necessary. We must try to present the whole field of learning in an integrated rather than a fragmented manner.

We have observed over the years that it is possible for children to learn free from pressure and fear. External motivators are no longer the only driving forces; there can be space for children to learn and discover with a sense of freedom. Learning can and must happen with a great deal of space, leisure and enjoyment.

Our basic question is whether we, both adults and children, can learn about ourselves and our psychological lives. Without such a deep investigation and understanding of ourselves, any attempt to understand society and social issues seems pointless. Each of us is reflected in society and is a reflection of that society. To understand our complex world, the first inevitable step seems to be that we must begin to understand ourselves.

I would like to emphasize the fact that learning is never a private, isolated activity. Learning is an active process that happens through collective relationship and investigation. An investigative process focused both

inwardly and outwardly, offers the space for radical change. Similarly, change sustains the tremendous energy required for reflection and investigation. A mode that is in essence investigative and reflective, as I had mentioned earlier, is never a given. It has to be created through a huge commitment of energy.

Co-operation

Yasmin Jayathirtha, CFL

Learning is thus an attempt to understand the world, including ourselves. This is a very urgent task since society is trying to come to grips with huge material growth and a desire on the part of every one to have an affluent lifestyle. In the recent years, this is coupled with a growing realisation that this will have major impact on the earth leading to climate change and loss of diversity—besides just not being sustainable in the long run.

Studying global warming in a chemistry class, a student asked: what can we do cut down the amount of CO₂ released? I answered –consume less. His response was—no, no –I mean realistically! He is a fairly sensitive fifteen year old but he realises that it is difficult to consume less, that society's message is the opposite: success equals consumption.

Children who go to school spend the largest part of their lives there and this is where they learn to socialise,

adding to attitudes already learnt from home.

There is a terrible dichotomy between what value classes teach—sharing, compassion—and what is expected in the classroom: achievement and individualism.

It is clear that we have to learn to think of the world as being a part of us. Holistic education, educating the whole child not just a part, is talked of a lot. What phrase should one use for an education that teaches that you are a part of the whole and that your actions create the society you live in?

A classroom has to teach you to think about the effect of your actions. The structure of the classroom has to help us learn this and hence the need for co-operation. What do we mean by co-operation? It is a sharing, a partnership, not necessarily equal but one in which any authority comes not from position but by taking on responsibility.

We are talking about a classroom where students cooperate with each other and their teachers and vice versa. For this to occur we will see later how it will have to extend outwards. If we consider the classroom as a microcosm, we will have to work together to create an environment which will enable every student to participate and not be forced to drop back. This will be a place where individual success is not achieved at the cost of group

learning and students are not passive recipients. For this co-operation to exist there has to be a relationship based on mutual responsibility and dialogue. This will be hard for the teacher, since it means giving up a position and being vulnerable, but the gains are many. At a very surface level it constantly refreshes your teaching since each class/student will respond to a statement made by you differently. It can illuminate your teaching showing you why some methods work and others do not.

At a deeper level, this relationship allows you, an adult, something very valuable, an 'in' into your students' lives. You can share your concerns with them and they will listen, because you are a partner. Since you are not portraying yourself as an authority and they can question you, you get the same rights.

What are the difficulties? One real difficulty is that of assessment: how do you gauge students' understanding? In small groups, it is easily done, by throwing individual questions or observing them. In a more structured classroom, what will take the place of weekly tests? One school we know uses the tests in an ingenious manner: they give the tests but do not hand out the results, but instead use it to tailor homework to aid learning.

It raises questions of what is assessment, what are we assessing, why is a time frame for acquisition of knowledge important? All these are very disturbing questions for a society which administers as many entrance exams as ours does.

The second difficulty is motivation. Competition as a tool to get performance is lost from your hand in the classroom. Only the lazy and bright students will mourn its going since they depended on it to work and you with them will have to find other ways to keep them from getting bored. In a cooperative set up they can help the less able, deepening their own understanding in return. But in a society which measures success and failure in microseconds and fractions of centimetres and marks, can a student cope? Obviously, not alone – the structure in the classroom must be reflected in (or rather extended to) the school and home. So structures there have to become non hierarchical, based on dialogue and relationship rather than strictly defined roles – teachers have to constantly work with each other and the parents to allow dialogue and relationship to dictate events. This will shake our accepted ideas and can be very scary. Adults will have to question long held truths and be open to questioning both by others and by themselves. None of this will be possible without the third strand of our work – reflection.

Reflection

N. Venu, CFL

The inclusion of reflection as part of this trinity of processes arises from our feeling that an inward journey of questioning and attention is a necessary part of any learning environment, for adults and the young. However, we need to be cautious. These words can be interpreted in many ways, and could result in confusion.

Hence it is important to clarify in what sense we use this term. To us, reflection is an open-ended engagement with our inner world that reveals its connection with the external and vice versa. It is a dimension that is difficult to capture in the conventional ideas of curriculum and method. As a process, reflection is intimately related to both learning and co-operation. It is not a psychological technique or a training programme.

Why is reflection important? Much of the turmoil both in the personal and in the social realm has its origins in our flawed understanding of our own nature. Destructive emotions deployed to protect rigid personal and collective identities are a prime cause of unhappiness and violence in our lives. The pursuit of individualism with its excesses is increasingly being mistaken for freedom. Well-being then, is clearly a casualty. Attempts by statesmen and saints to offer us moral

advice have failed routinely. We do not need more advice. We need better understanding.

This understanding, that is both self-understanding and a sense of responsibility for the other, has to be an integral part of any educational environment. It opens our hearts to co-operation and learning. A just and peaceful society, a sane society, if it is possible at all, will need citizens educated in such environments.

I would like to conclude with the following comments:

- We have outlined three paths in the exploration of a radically different education and mentioned three processes that support it. We believe that it is possible to explore these processes in many ways and in many settings.
- We do not claim to have given a complete and exhaustive picture of the possibilities open to us as educators. Nor is this an attempt to create a new theory of education. Our effort has been to highlight insights that will help us focus on many core issues over the coming four days.
- Our interaction here will include discussions, workshops and activities that emphasize one or the other of these aspects. We hope that at the end of it we will have gained an understanding that will enrich each one of us.

- Needless to say, we feel that these concerns with learning, co-operation and reflection are not merely for a privileged few. The challenges that we face as a society, and perhaps the unknown challenges of the

future, continue to need radical responses, not business as usual. And in one way or another, we are all in the same boat.

Thank you and a warm welcome, once again.



Invited Talks

In this section, we present the various invited talks given at the conference. The speakers presented on themes broadly related to the aims of the conference. We have tried to include verbatim talks where possible; in a few cases the talk has been reconstructed based on notes. We have tried to maintain the voice and tone of the original talks.

Comments at Centre For Learning

Gopalkrishna Gandhi
Bangalore 18 December 2006

Friends,

Tagore's *Gitanjali* written in 1912 won him the Nobel Prize. His lesser-known but hugely instructive little story called 'The Parrot's Training' written in 1918, won – and wins – him grateful readers. Many of you must know it. But if there is even one here who does not, it would be worth reading a brief excerpt from it for that person:

Once upon a time there was a bird. It was ignorant. It sang all right, but never recited scriptures. It hopped pretty frequently, but lacked manners.

Said the Raja to himself: Ignorance is costly in the long run. For fools consume as much food as their betters, and yet give nothing in return.'

He called his nephews to his presence and told them that the bird must have a sound schooling.

The pundits were summoned, and at once went to the root of the matter. They decided that

the ignorance of birds was due to their natural habit of living in poor nests. Therefore, according to the pundits, the first thing necessary for this bird's education was a suitable cage...

A golden cage was built with gorgeous decorations....

The Raja at length, being desirous of seeing with his own eyes how his Education Department busied itself with the little bird, made his appearance one day at the great Hall of Learning.

...The Raja was satisfied that there was no flaw in the arrangements. As for any complaint from the bird itself, that simply could not be expected. Its throat was so completely choked with the leaves from the books that it could neither whistle nor whisper.

Nevertheless, nature occasionally triumphed over training, and when the morning light peeped into the bird's cage it sometimes fluttered its wings in a reprehensible manner...

'What impertinence!' growled the kotwal.

The Raja's brothers-in-law looked blank, and shook their heads, saying: 'These birds not only lack good sense, but also gratitude!'

With text-books in one hand and baton in the other, the pundits gave the poor bird what may fitly be called lessons!

The kotwal was honoured with a title for his watchfulness, and the blacksmith for his skill in forging chains.

The bird died.

Nobody had the least notion how long ago this had happened. The fault-finder was the first man to spread the rumour.

The Raja called his nephews and asked them. 'My dear nephews, what is this that we hear?' The nephews said: 'Sire, the bird's education has been completed.'

'Does it hop?' the Raja enquired.

'Never!' said the nephews.

'Does it fly?'

'No.'

'Bring me the bird,' said the Raja.

The bird was brought to him, guarded by the kotwal and the sepoy and the sowars. The Raja poked its body with his finger. Only its inner stuffing of book-leaves rustled.

Outside the window, the murmur of the spring breeze amongst the newly budded asoka leaves made the April morning wistful.

That is Rabindranath Tagore at his imaginative, sensitive, creative best. As you know, Tagore started Santiniketan with a school.

Now, hallucinating for a moment, let us reverse the story.

In a tale of future horrors, most of the human race has become extinct

— perhaps no great regret. But let us assume it has — doubtless by the blowing up of cities — with a Bigger Bang than the one that brought it into being. But before that actually happens and a nuclear winter sets in, a little boat of brave humans launches out to sea in a new Ark, to reach some shore where they can perhaps become the nucleus for a new human family. After a long, long journey through increasingly unbearable privations the vessel reaches an unknown island, which has been missed by ancient navigators, medieval explorers, even by the most sharp-imaging of modern satellites. Sadly, by the time the little vessel nudges the soft shore of that island, every single one on it has succumbed except a little infant girl, who had only just begun to toddle before the brave team had set off.

This very strange island is bereft of human life but it has parrots, hundreds and thousands of them, inhabiting it like some ancient tribe of humans might have, unbeknownst to others. Each parrot is a living, throbbing bulb of green that glows yellow at dawn, subsides to its own emerald at dusk, catching the orange, pink and purple of the setting sun on its plumage before it sleeps. But when flying in a group, the parrots are a canopy of the brightest green, the chlorophyll brilliant against blue sky or white cloud, moving with a propulsion

that has rapture within its speed, a sense of discovery rather than of invention, and a great spirit of collectivity that is without uniformity.

On this parrot island, the human child toddles ashore. The boat itself goes gently down as if to say its attenuated purpose – depositing the child ashore – has been served. The child looks around to see the boat but finds no trace of it. And then, in her daze, she looks up to see what she has never seen before – parrots upon parrots, screeching, singing, laughing, chattering, flying, looping loops, in joyous abandon. Had it not been for this spectacle, she would have probably broken into a wail.

There are no other birds on the island nor indeed any other forms of life, only these parrots, bright green and yellow, swift of flight, smart as smart can be, tremendously confident, whether in flight or on the ground and totally in charge.

The island has trees in profusion, though – trees that flower, trees that fruit. They are the parrots' food-provider. And the parrots are the trees' propagators. These parrots have also, over centuries, acquired the characteristics of flightless birds. They can walk like fowl and when they do so, which is often, they resemble poultry.

They have developed for themselves something else as well: a

system of government with a King and a Prince.

When the great brood of parrots in its swift and musical flight, winging up and down, moving like light, rolling from side to side, joyously, sees this strange creature, wingless, beakless, no green or yellow on her, toddling, puzzled, on the edge of the island, it goes into collective shock. For these parrots have never seen something like this before. The fast-moving cloud of emerald stills mid-flight, like a paper-kite halted by a tug of the kite-flier's string. The leader of the parrots, with a greater intellectual capacity than the others, waves his right wing and says 'The God of Evil has sent a wingless Creature to destroy us, let us have nothing to do with it'. But another, gentler parrot, with a greater spiritual capacity than the others, waving her left wing says 'No, this thing is a gift to us from the God of Good, let us take it with us and give it to our Prince'.

All the parrots agree with the gentle parrot and come winging down, settle around the girl, and curling their wing-feathers around her hand, walk her lovingly down to the King's tree-home. The Prince is thrilled beyond screeching. 'We will feed this walking bird with our very best flowers', he says, 'We will leave her to wander where she likes, sing, dance'. And pointing to her hands, he says 'Those funny featherless things sticking out of

its sides with five digits at the end of each, will surely become wings in due time and it will then become a parrot just like us!

The King is pleased that his son has a new toy. 'Lavish love on it', he decrees, 'and lavish food – the nectar of the sweetest flowers, the buds of the most delicious flowers, but above all tenderest petals of the choicest flowers'. All these are brought. Soft petals, sweet petals, petals of different colours, varied textures, diverse feels. They are brought with the love of blessing, the care of an offering made in thanksgiving and hope.

The child loves the taste of nectar, of honey. It is pure. She does not, of course, know what 'pure' is or could be. But when she tastes the honey that is placed by a parrot beak gently into her tiny mouth, the tongue comes alive. The touch of this substance is fluid and yet not flowing, sweet yet not sugary. It has the essence of flowers and yet from somewhere deep inside the flower, where the flower is more than a flower. And she finds in her mind the meaning of the word 'nectar'. Then come the flower buds. She likes them too but not quite as much as the honey. They are tiny, soft and both fragrant and delicious. The petals of flowers, however, are a different matter. She takes them in only because they are brought with such bright-eyed

unblinking love. Petal after petal of freshness is sent into her until she can take no more. "It has had enough of beauty and of nature for one morning," the parrots say to each other and let it be.

And so it goes...this human infant who has had but the faintest beginnings of human memory begins to forget those images of her earlier life. She outwears the little dress she has on her ('Look, look, her old feathers are moulting' the gentle parrot says). The child forgets all mental conditionings, forgets repetitive habits of the human mind that had come down to her through the processes of genetic infusion over millennia. And she begins to live in her new freedom. She ceases – almost – to be a pre-conditioned human and becomes – almost – a free parrot. Only, she cannot fly.

As time moves on, a sadness begins slowly to come over her. She begins to sicken on the fruit. She begins to crave for something white and warm to drink, for something to cover her body with, something which can be slipped over her head and onto her tiny shoulders. And then her memory, dimming but not gone, shows her one picture, like a forgotten photograph, of faces which were flattish, beakless, but full of something she cannot name but knows – human expression.

The child is not just sullen, she is sad.

One day, when waters pour down from the skies in sharp sheets, the world of parrots, with the natural ease of its kind, finds ways into nest holes on trees, crevasses, hollows. The parrots do so without resentment, without resistance. That is Nature, they know. It is not just futile but wrong to resist Nature. We are Nature, they say, so is rain. We are the rain and the rain is us. With one quiver of the body, raindrops fall away from their plumes. With one flap of the wing, the wetness glides away.

But the child? Oh, she is wet through. The rain clings to her skin, cold and unfriendly. She scampers into a low bush that has some boughs growing out of it to make a kind of shelter and she cowers into it, whimpering, shivering, fearful.

And in that sanctuary, she recalls, dimly, another glowing image: the warmth of a lovely indoors. A rocking chair, a lap, the faint image of a window, a glass window, through which she as a baby is shown water coming down on the garden outside. And she remembers a sound, a human sound, a voice, a human voice, which says something to her like “r-a-i-n” - and urges her “Say with me, baby, ‘r-a-i-n’ - that is rain...” And then the child remembers for the first time a word she has not spoken for days ‘M-a-m-a’. And she loses consciousness.

The parrots are in consternation.

Now, the parrot world has, through the work of some subliminal collective memory over millennia, perhaps through a parrot that had travelled to the human world or escaped from some ship, learnt of two ‘humans’ – one with a single-syllabled name it can pronounce, ‘Blake’, and another many-syllabled it just cannot, who taught humans to walk, not wander, not march, but walk, wearing, while in a land called India (weather permitting) no heavy shoes or socks, being barefoot.

The parrot world has also learnt of an image. This image is outside of its experience and yet within its understanding; unfelt and yet tactile. It is the ultimate of all horrors, the omega of all nightmares. It is the hated possession of the parrot world’s genetic memory. It tells the parrot world that there is something altogether too dreadful, too unthinkable, too unacceptable and it is called ‘cage’. When the child goes into the bough to save herself from the rain some parrots in outrage and disbelief say, ‘Oh no – the Gift-Parrot has sought a cage!’

‘Cage!’ There is alarm in the King’s palace. ‘I told you’, the Prince says, ‘We have not given it enough freedom, we have denied it the opportunity to roam free, to fly unrestricted, to seek the beauty of the setting sun, the moon and the stars at night’.

One day, when the little one is barely able to sit up because of the packed density of the petals stuffed inside her, a gentle breeze plays around her. And there is a sound in the breeze's movement which is different from that of the flapping of parrot wings or the murmurings of leaves she had got so used to. It stirs something within her and that is the sound of a singing voice, not a chirping voice, but a singing one. And a human-singing voice. It sings softly, indistinctly, and makes her want to curl up and sleep. It is a lullaby.

The parrots, of course, have their own song, their anthem, which goes like this:

*We are sane, we are free
tu-wit, tu-wee
Our home is the leafy tree*

*We soar, we ski
tu-wit, tu-wee
We're so, oh so, hap-ee*

*'Beware of the cage'
Said Blake, the Sage
'That puts all Heaven in a Rage'*

*'Rid doors of locks'
Said another in his talks
Free feet from socks'*

*'Don't cram, just See'
Don't fret, just Be'
Said He*

*We are sane, we are free
Tu-wit, tu-wee
Our home is the leafy tree*

*We are free, we are sane.
We have no 'code', we use no cane
We kiss the cloud,
we sip the rain*

*We are sane, we are free
tu-wit, to-wee
Our home is the leafy-tree*

After the child comes to, the King sets up a small choir of parrots to teach her this song, softly, softly, without any compulsion on the poor little thing. There should be no forcing of the exercise on it, he says, whether on the accent or the pitch, the rhyme or the reason. But try as she does, the child cannot learn this parrot-song of freedom.

The child tries to lisp some notes, which come to her from some dim haze of memories, mixed up with the image of a woman's face, her mother's, and the sound of some rhymes and words like 'sleep' and 'hush-a-bye' in them. Tears well up in her eyes and choke her voice.

Friends, hallucinations must not extend. Parables must have a stricter word limit than 'speeches'. Mine does, and has ended. If I have offended anyone by my remarks about sanity and freedom, I apologise to them

most sincerely. My only purpose was to share the thought with all of you, teachers and students present here, that regimentation in schools or elsewhere – except in the uniformed services – is wrong. But the alternative to it has to come not from out of a book of antonyms but from a register of alternatives. The alternative has to relate to the individual, to the context, to the times. People who cage parrots do wrong. ‘Parrots’ who uncage people can also go wrong.

Whenever I visit a place of learning I genuflect - mentally, of course. And this has nothing to do with the kind of school that I am at. For these are all places where learners are being taught by other learners to learn that life, the biggest teacher of all, gives us of its lesson in unexpected ways. And the biggest of these has to be the lesson of balance.

Tagore and Krishnamurti had and shared with us, balance. They showed us that balance was not a Euclidean proposition, true for all time everywhere. They showed us that balance depends on two factors: the gradient of the challenge and the ability of the one facing the challenge, to take a stand on it.

If schools are to impart balance to students, they can do so only in terms of the recipient’s abilities, self-image and bhava, not the school’s own ability, self-image and bhava. If the

regimentations of the assembly-line are wrong, the regimes of no-line-at-all cannot be right either.

Tagore wanted his beautiful school-experiment in the Patha Bhavana at Santiniketan to meander, not proceed in some straight line like an excavated channel. He wanted, thereby, the meandering course of the pupils’ lives to find their natural bent. He sent his own son Rathindranath to that school when it began, in 1901, with five students and five teachers. The story of each of those students and teachers in that remarkable 1:1 ratio is worth studying. I will not take your time with that except to say – by way of an aside – that one of the teachers was astonishingly different from the other teachers (and from most people). He was, of course, a good teacher and was loved by his students but his best friends were - caterpillars! In his ashram home he bred hundreds of them and at the end of an exhausting day at work would go to sleep wrapped up - of all things - in newspapers with his pet caterpillars let loose to crawl on them. What the caterpillars thought of this freedom to saunter over world news we can never know, but Lawrence Teacher obviously slept the better for this procedure. It is no surprise that not long thereafter Tagore’s school requested Lawrence Teacher to shift to other forms of assisting Santiniketan.

Independence does not have to be

eccentric any more than self-discipline has to be regimental.

For freedom to be responsible, for experiments to be non-erratic and to lead to balance, Tagore and Krishnamurti have set standards and left examples. We must experiment but not become prisoners of tentativeness. If we do, we will become prisoners in unbarred cages.

Annie Besant broke with western convention, giving Theosophy new vigour. Krishnamurti and Rukmini Devi broke with Theosophy – and each other – leading to the founding of the ‘K’ schools and of Kalakshetra. The process continues. Every break is a new amalgamation, which is bound to break again. Life is like a sheet of postage stamps. Some look at its visuals. I am drawn to the serial perforations that dot it in intersecting lines. Is each perforation there important, or the jointure between each perforation? Do I say the line is meant for tearing or for holding? A society – the Theosophical – led to a great Exiting. The Exiting, with the Exiter’s name got Incorporated. The ‘Inc’ has led to the teaching of the Teaching, which has led to a Walkaway, if not a Walkout, and a Centre has been born. Do Centres ‘hold’? Do ‘falconers’ remote-control each ‘falcon’? There is in every one of us an anarch and a systemiser. Buddhas walk away from palaces that are prison-like to

found or inspire Councils which have their own bars, systems, schisms. Schismatics become prophets, prophets generate schism. Life has given to each of us (or positioned in each one of us) a ‘zero’ and a ‘one’, engaged in endless play, the ‘zero’ prefixing the ‘one’ and saying “you are nothing” only to find the ‘one’ ahead of it and saying to it “We are ten”. We cannot teach non-teaching teacherlessly. We cannot – and should not – cage the parrot. We cannot – and should not – teach the unwinged to fly. We can and should uncage the parrot, teach the unwinged to stand, to walk, to run and to choose between being still or in motion according to what seems and perhaps is, right for that moment. Choose between the ‘zero’ and the ‘one’ in us to use those two values to differential effect. The ‘zero’ will tell us that life itself is perhaps a trap and the body a ‘cage’. The ‘one’ will tell us of the entrapments and cagings of circumstance from which others need to be released. The ‘zero’ is the ‘vita contemplativa’ we need for ourselves, the ‘one’ is the ‘vita activa’ we need as members of a social order.

If I may conclude with a non-thought or two from a non-teacher.

Schools must see themselves as working with today’s student in today’s classroom, in today’s multiple and mutually canceling realities. Who teaches those? Holders of B.Ed. and M.Ed.

degrees? No, those who have experienced these realities. Let schools bring in as Teachers Emeritus such persons, young or once-young, from the different theatres of our realities. Not itinerant Governors and fleeting experts but real people who have taken their share of knocks in life. And let students gather around them, in tune with their own aptitudes, and learn real lessons about real life from real people. A potter in my old school and an old Haryanvi mithaiwala in my college taught me as much about life as my teachers taught me about my subjects of study.

You will, you must, ask me what I mean by 'realities'. I have in mind, principally, the realities of India's contemporary contradictions and divides. Be assured, I am not going to deliver myself of a homily on the rich-poor, urban-rural, sectarian-secular story. There are, apart from those, certain old and certain new divides that comprise a daily, hourly reality. Paradoxically and tragically, we are witnessing what may be called attitudinal divides that are acquiring disturbing proportions. Those who want to protect the environment, save the forests, and its denizens stand categorized by some perfectly real people who stand on the edge of the destitution line, as 'elitist' and 'people-unfriendly'. How right is that dividing line? Those who want to protect animal rights are categorized by some

real people as the kutte-billi walas who accord the *insân*, a lower priority. Those who have an interest in khadi, in hand woven fabrics, in crafts, are typecast by those who out of practical necessity and low budgets, use synthetic material as fashion-walas. Examples can be multiplied. You know them better than I. There is, however, a reality within these realities of the Great Indian Divides – GIDs we can call them – which gets drowned in the din of agitations. This greater Indian reality – GIR we can call it (invoking the great lions of Gir for blessing) – is that, in the long run, conserving forests is people-friendly, protecting animal rights is about being civilized not sentimental, khadi and crafts help very, very poor people. The GIR needs to be redeemed from the GIDs, the greater from the great, the truer from the not-untrue. This requires a good grounding in both precept and in tactics. 'The road less travelled-by' is an unforgettable phrase of Robert Frost's. Schools such as CFL may help students choose – not between right and wrong, truth and untruth, non-violence and violence – that is easy. They must help students learn to choose by self-enquiry between two truths, between two paths both of which may be true in part. That is not easy.

Schools stand divided. Those that are 'standard' and 'assembly line' are self-described and self-defended in

terms as “after all, we have to be practical; we live in a world that competes, grades and employs according to grades unless of course you have ‘pull’ “. And those schools that ‘experiment’ like Tagore’s or Krishnamurti’s, howsoever unshod and unsocked their students may be are, on the other hand, regarded as ‘elitist’.

Schools need to look upon students as individuals with distinct backgrounds, specific aptitudes. A parrot can be caged; a parrot can cage. The word ‘special’ is used now for students with ‘special needs’. Every student is, actually, ‘special’, for each has invisible deficits. But also because each has invisible strengths. That ‘thingness’ – negative or positive – in each student needs discovering and attention. Let no school say Tagore could do that because his school had five students and we have five thousand. That argument is not without force, but is often used as a matter of course. There are ways of discovering the ‘special’ in each student. And ways of telling that ‘special’ how to grow through and out of cages.

One balance that is needed is on the gradient of perceptions about what is ‘sane’ in a society. Extremism, in any cause, including and especially in the cause of learning is wrong and unwise. No one can claim a monopoly over sane living. We can only claim to have bits and pieces of sanity. We can

aspire to enlarge those segments by trying to understand why some feel comfortable caged and some not.

Schools that are located on ‘the road less travelled-by’ share something with the gurukulas of old. But we live in times that have gone beyond gurukulas (though gurus of a new kind sprout all over). Until not very long ago, leaders of Indian opinion from the so-called English-educated elite – the ‘upper crust’ – like Tagore in Bengal felt and spoke for gurukulas, handicrafts. There was an ideological compact between the two poles. As in the railways, the transition made by the most famous Indian of our times was straight from the train’s 1st Class to its 3rd Class. Today the Indian Class 2 tier and 3 tier – in other words, the middle class – is the dominant class. It is that class which characterizes the 1st as the elite and has virtually done away with the 3rd. But the railways, great and representative of India that they are, are still not the whole of India. An equivalent of the old 3rd Class does exist – in the shape of our deprived and marginalized, many of who are tribal. And in the shape of gender discrimination across all Classes. The GIR – the greater Indian reality – is also about them and their future. The GIDs are also about a reality and need attention but not at the expense of the GIR. Here are two competing truths. And choosing from them takes something.

Centres for learning, if they are aware of these realities, must prepare themselves to address the Great Indian Middle Class about its illusions and delusions. They must not luxuriate in the false dichotomy of 'standard education' and 'liberal education' but prepare students to address real-life, the razors' edge of the moment where situations in today's India call for

choices to be made, and for a balance. They must prepare students to rage against complacent calm and to be calm against incendiary rage. For we have both amidst us – calm where a creative rage is called for – as against injustice. And rage, real or simulated, which destroys. To achieving that balance, to achieve the skills of Right Choice, may your deliberations be addressed.



Reinventing Education for an Inclusive World¹

Prof Yash Pal

Modes of acquiring information have been changing very fast. We are so exposed that our own faculties of reasoning and model making are not used very often. Fashions have predominance, in thought as in dress. Yet in the middle of tremendous forces of uniformization the rebels and nonconformists need not be submerged or eliminated.

Means of acquiring information might have been transformed but education still needs teachers and fellow students. Libraries are necessary aids; they have existed for a long time but they have never been universities. Nor would they become so in the foreseeable future. But a radical transformation in the character and modes of learning is definitely indicated. In fact it is already happening. There are tremendous advantages to be derived through the emergence of the new - like digital libraries and the Internet. There are also some pitfalls and dangers that might destroy education and replace it with mere training for skills. This needs explanation.

My complaint against the present education system in our country is that it tends to be contextually disconnected.

Personal observation and experience do not change what is required to be learnt and the manner in which it is to be learnt. A defined collection of competences and well-listed pieces of information constitute education for everyone, with little or no room for personal variation. Not only the learner but also the teacher is bound by contours, in expanse and in depth. The interconnections with allied areas are normally frowned upon but when allowed they are restricted to examples that might not be relevant any more. The testing methods ensure that diversion from the well-defined path does not take place. Even the pathways for excursion are defined to the extent that they too form a part of the inorganic contour that contains the syllabus. This works reasonably well for restricted training but not for growing minds that might wander off into unexpected but often exciting new areas. We are not honed for creating new disciplines.

Why is this the way it is? We might argue about the reasons that made education as mere training for a world created by others.

Let me share my thoughts on what seems to me an important challenge

¹ UGC Golden Jubilee Lecture, Mahatma Gandhi University, Kottayam, 26.11.03

Prof. Yash Pal was unable to deliver his lecture in person due to sudden illness. This talk was read to us by Prof. N. Mukunda.

before the present world. This concerns the need to combine **globality and intimacy**: for education, for social inclusiveness, and a sustainable future for humanity.

Over a quarter of a century ago I became enamoured of the possibility of quickly interacting with and reaching masses of our people living far from concentrations of infrastructure using space communication and space broadcasting. In addition there was also the element of forecasting weather and monitoring of resources. I felt that this technological possibility had been specially invented for a country like ours. This is how I got involved with the setting up of the Space Applications Centre at Ahmedabad and the first large-scale socio-technical experiment in communication using a satellite. The aim was to reach thousands of remote villages, and only villages, via direct reception TV. This was when television in India was confined to a couple of hours of transmission a day in Delhi and Bombay.

This experiment involved several thousand man-years of effort by technologists, social scientists and communication experts, in addition to the NASA satellite ATS-6. It did not radically change India but it did influence the life of a large number of people – some of them directly involved and many who were

influenced by the effort. A number of things became clear during our engagement with thousands of villages spread across the length and breadth of our country. Bridging the distance was a great advantage but giving voice and initiative to the enormous diversity therein was not so easy. I began to realize that intimacy is crucial. However, it is seriously violated when the physical and cultural distance of the source increases. Space communication is a marvellous gift of the present epoch, but by itself it can be best used for sermonizing, indoctrination or advertising. Even though a lot of information can be delivered, true education and development need greater contextual connection and participation. On the other hand without a long range connection, intimacy by itself would lead to parochialism and alienation from the world. The challenge is to find ways of addressing this dilemma.

I am convinced that many beautiful aspects of being human arise from closeness of a limited number of people. Crystals and gems arise from residual short-range forces. This is equally true of naturally existing elements and molecules. Leave everything else and think about the molecules like the DNA, so central to the happening of life. Language, humour, music, plastic arts and crafts, architecture of different places, even

science would not show their peaks unless some people were together and communicated through a language much beyond mere words. This is not something that happened only in the distant past. Great educational institutions would not become great unless people could infect each other at close range. That is why people strive to go to places where there are some outstanding teachers, researchers and gurus, notwithstanding the fact that books and papers written by the distinguished academics in these institutions can be accessed in print or over the net and in libraries all over the world. In our country we traditionally recognized that learning could not be transported as books or instructions uniformly applicable to all the learners. We believed that it comes through the chemistry of interaction between the teacher (guru) and the learner (shishya) – the tradition being known as the guru-shishya parampara.

Basic talent of humans is evenly spread across the world. Much of it is hard wired in our make up, thanks to our common evolutionary past. It is a pity that a large fraction of people cannot participate in the process of creating new knowledge and new things. Therefore we have come to a state where a few are in a position to condition the world and the rest are only conditioned. There is a small concentration of creators who might

be excused for believing that they are also the ones who have the right to create the world in their own image. This situation prevails all across the world – not only between countries, not only between the North and the South, but also between people separated by religion, race and caste, between men and women, and between the countryside and the metropolis.

In the field of education our country has always had some discrimination between those who could afford and most others who could not. Now this has been taken to a vulgar level. This is being done through various mechanisms, partly unintentionally but mostly with a purpose to keep the riff raff out. Exclusion is becoming extreme. I do not have to give examples of this phenomenon, but a few reminders might be appropriate:

- Private schools, usually called Public schools, some excellent, many pretty bad with their distinction being that they also want children to carry heavy bags and start with English at Nursery level itself.
- Municipal and Government schools
- Schools that have no buildings
- Schools that have no trained teachers
- No School in the neighbourhood
- The first category of schools might cost (per child) much more than the average per capita income of an Indian.

- The mismatch between the load on children and quality of teaching is such that a large fraction of the students need to join coaching classes. In metropolitan areas coaching expenses per child reach 5 to 10 thousand rupees per month in the last years of the school! This has become a fine mechanism of social exclusion. Sometimes I feel that many of the ills of our system arise from a huge conspiracy of coaching institutions. Indeed in many a case coaching has replaced education. How much lower can we get?

I may go on but even this small list makes it clear that our system is designed for excluding a large fraction of our population.

Academic reasons for the barrenness and non-inclusive nature of our education

If I were asked to name one major direction that could drastically change the nature of our education and research enterprise from kindergarten to the university level I would say:

- Build on individual competence and exploration and couple with the life around you.
- If this advice were taken seriously it would imply that:
- Learning is not delivered; it is created.

- The process of creation necessarily requires building on what the child already knows, what it observes and explores, the experiments it does while playing, studying and dealing with the world around.
- Since the experience of one child may be different from that of another, the syllabus for learning would also be different.

If that were so we would not insist on centralized examinations. We would examine each child the way a music or dance guru examines his/her shishyas, or an ustad or craftsman trains his/her apprentices. We would not make children run a competitive hurdle race to get that extra mark of distinction. There would be no need of education destroying coaching classes.

Learning would not be imprisoned within disciplines. Nothing would be out of course if it were comprehensible.

The system would require full freedom to teachers to learn, explore and grow with the children under their care. They would also form alliances with each other and others outside the school to pursue their learning into uncharted areas.

University level

What I have said above in respect of school education applies even more strongly at the college, university and research levels. If we engage with

society and couple with its arts, crafts and industry while learning and finding out, each of these sectors would gain. The fresh minds of young students along with their energy would lead to mutual transformation. Research students would not be waiting for their guide to hunt for a new problem for their dissertation. This would have emerged naturally through their engagement, with each other and the environment and industry around.

For our research areas this would be rejuvenating. For example, there would be a chance for physiologists and physicists to work together. If they both happen to be in a university and are also engaged with industry, they might get to a stage when some of the new marvellous technology for medical diagnosis would be invented in our country. This would be a way to correct the imbalance in which most resources are spent in national laboratories while most of our young persons are in colleges and universities.

There are many tricky areas where social sciences and physical sciences need to work together. This is required even for defining what would be a good society and furthermore the means to achieve it. A lot of new thinking is required in economic, political and social spheres. If this is done without including scientists and engineers, even the new would be copies of what obtains elsewhere, or impossible to achieve.

For all this to happen we need to break walls and couple. Couple and engage with our society. I am sure that if we design our education and research enterprises this way all the other problems would resolve themselves. The sheer excitement of such a free Manthan and mission would ensure that. The silly competitive exams on which we expend so much energy would acquire a diminished importance and then disappear. I do not know why we are afraid of going this route.

Foreign universities

I am not surprised that so many foreign colleges and universities want to set up shop in our country. The goods they come with are not different from those brought by sellers of TV, computers, cars, motor cycles and cosmetics. They will sell so long as there are buyers with money who can flaunt foreign degrees. We are already decoupled from our society. All they would do is to decouple us some more. We should not be too worried because the individuals they would capture in their net would be relatively mediocre (not being able to get into good institutions on the basis of their merit) besides the fact that they might have already decided that emigration is the most desirable step towards their future. I may not be too worried but that would change if we begin to

believe that this would lead to import of truly high-class education into our country. I do not think too many Nobel Laureates are going to be on the staff of these outside teaching shops who would be available for relaxed interaction with students here and consider their presence in these shops as significant steps for advancement of their own thought and exploration. As I said earlier, good education is not delivered; it is imbibed and created.

Information technology, the internet and the web

Let me first state that I agree with many people that coming in of this technology has had, and will in future have even more seminal impact on the way the world develops. But there is need to develop specificities and configurations suited to our needs and aspirations. As far as education is concerned I find it amazing that at my age, without travelling out to a library every day, and without the help of an office and stenographer, I can stay fairly active and in contact with the world. If spectacles had never been invented I would have stopped reading by the time I was fifty. I got another twenty-five years lease after I got my glasses. I was getting a bit hazy in vision, particularly at night, till I got a lens implant in both eyes and now I see as well as I did when I was forty

or younger and I am mobile twenty four hours a day. If I had been born fifty years earlier the world would have been saved from my meddling for the last 25 years. Poor world – now that I can exchange conversation and bother it with what I think might be useful ideas even now. Yes, it is good to have Internet and the Web. But Internet alone cannot provide you with education or wisdom. Internet works better for those who are already engaged with something. If you are not, then Internet is like having a dictionary with the hope that you would learn a language and become a great writer! Well, not quite, firstly because a dictionary does not have as much misinformation as the Net, and secondly because the dictionary is not as alive and changing as the Net. Internet is mostly full of rather superficial information and that is what you would encounter if you just surf. Indeed you could almost say that you have to wade through lot of noise and sometimes you can get fond of noise, much like you can get fond of loud unmusical music. There is a tendency to avoid depth and immersion. If you get addicted to that you might be moving away from the habit of independent thought. Downloading from the net and using the image making facility of your computer, you can easily use lot of eye-catching and colourful presentations

as substitutes for a well thought out argument. It is easy to fool people and sometimes, even yourself that what you have said is not without real content. It might appear that you have lot of information, that you have learnt a lot and it is easy to mistake it for understanding. Lot of dependence on Net surfing can encourage a culture of education in which information substitutes for understanding. Indeed it might be easy to forget what after all is 'understanding'. Such a thing would be fatal. In fact that is the main flaw of education now. We load children with enormous amounts of information to remember and pass examinations with 100 % marks but we do not give time for or value understanding. There is a danger that thoughtless use of the Web and other manifestations of IT like CD ROMs might encourage this tendency besides another of our present failings – we are already decoupled from our environment and might begin doing so even more enthusiastically.

My belief is that Internet should be used to increase the dimensionality of our education and not just its information content. This would demand that we begin treasuring diversity of learning and move away from standardized, industrial production of graduates tested on machines we call 'common examinations'. Such an education would also encourage respect for and inclusion of people who have acquired their capabilities and skills with

different or no certification.

Possible socio-political significance of the web

The most important feature of the Web is that people can communicate even if they have different voices and languages. They can communicate and access. No one is superior; no one is on top. No one has to give up his/her way of expression. No culture is inferior. The Web has a texture that is inclusive.

In my book, the basic philosophy of the Web should be to move the world away from the present manifestation of globalization that has a few innovators and creators and the rest consumers; a few influence and the rest are only influenced. If we do that we would benefit the whole world. We would benefit not only by increasing the variety of directions in which innovations would occur but also through sharing the joys and depths of wisdom developed under different environments. In addition there could be, in my view, a fundamental transformation that might lead to different concepts of equity, harmony and inclusiveness – indeed in the way we organize the world from now on. I will presently dilate on this assertion.

Let me step back a little. We all realize, I hope, that a propensity for closeness to a limited number and categories of humans comes naturally to us – evolution has ordained that. To

repeat what I have earlier indicated, intimacy is that precious thing that defines humanity. Without intimacy we would have no love, no literature, no ceremonies, no ways of dressing, no cuisine, no festivals, no dance, no ways of greeting, no compassion, no reverence, no nothing. Intimacy is a product of evolution and long memories of myth and fable situated in specific environments. We are designed to treasure it. We are built to care for those who are close. We seek closeness for assurance that we would be OK. We consider it essential for our survival. It defines for us what we are – it gives the contours of our social “self”. We tend to define this “self” variously in terms of our country, the nation, ethnicity, race, language, religion and ritual. However, we must recognize that this essential element of humanity has also produced our heroes, patriots, colonizers, conquerors, despots, dictators and now, in large numbers, our technically equipped terrorists. We are in a serious bind and we have to find some way out in the next few decades of this century. I put such a short time scale for doing something so radically different - firstly because the problems have accelerated but also because we have an inkling of the way we might go about it. Till very recently we did not.

The real issue of modern times

Let me, at the end, come to the

basic question impinging on the search for the architecture of an inclusive world. I will not spend too much time defending its desirability. There is no future for a civilized existence without that. That such an architecture would necessarily demand a change in the way of thinking goes without saying. But it might also need inventions suited to our present predicament. I will not demand that every one on this planet should become equally affluent. Inclusiveness should not be so much about equality. Nor should it include any element of charity. The driving force has to be an enlightened self-interest. Without meaning to sound pontifical I would summarize my exhortation to the world and to us - my formula - in the following words:

No individual, no human collectivity, no country, no professional, no corporation, indeed no one shall be only, or be made into only, a consumer.

As a young man I was much taken with the independence movement of India. Our supreme leader was Mohandas Karamchand Gandhi. He had the pulse of the country and every one followed him. He was not a politician in the normal sense of the word. Even though some of the young people were on occasion a bit sceptical about several things he said and did, there was an instinctive appreciation of the fact that freedom he was seeking was not for the country

but for the lowliest of individuals in the land. Simultaneously he was also seeking an enhancement of those who governed us at that time! He was a religious man but the most valuable insights he provided were not that of a religious leader. Even when he talked of religion it was not any one religion. He picked thoughts from everywhere. In any case his important ideas about the essence of freedom and organization of a value-laden society were not based on moralistic teaching but as an insightful architect of an inclusive society. I do not think this was well understood by his followers or other charismatic leaders who later came to rule the country. This is understandable because at that time in human history his deep yet simple-looking ideas were not sustainable. So why am I bringing him into my talk today? I am doing so because I feel that Gandhi came too soon. Today he would be sustainable. A few implications of this statement are the following:

Gandhi talked about the concept of Gram Swaraj. This implied that no one should be controlled from a distance. This implied responsibility for independent thought and action. It also implied that if you wanted you could go your own way without being dominated by distant powers. He also emphasized that no one should be only a consumer. It was almost immoral to be so. He said he wanted production

by masses, not mass production. In the area of learning and education he firmly believed that lot of learning happens through physical involvement with your environment, designing and making what the community needs. When such activity is combined with book learning then you become a true scholar. Such an approach would introduce contextual elements into learning and make it more creative. He could be considered as the first environmentalist of the last century when one remembers his statement “there is enough in the world for every one’s need but not for every one’s greed”. Though it might be difficult to take each of his statements literally we cannot escape the discerning direction he was suggesting. There was clear understanding that distant control would usurp real freedom. That using goods and services provided by others without a similar thing being given in exchange would also lead to an enslavement and economic and cultural domination. That learning and creating have to be simultaneous. That lot of education can happen through fingers was an instruction we certainly needed in our colonial days and we still do. And all these ideas were soaked in an ambience of non-violence. In Gandhi’s days technology was massive and could not be easily decentralized without losing the advantages of scale. This is no longer true for most of modern technology. Not only software

but also hardware production can now be decentralized much more easily. Information can be accessed and shared. You do not have to travel out for information you need or want to give out. You have the option of living your own way and yet be connected. You can also change at your pace and change others with whom you interact. Gandhi's slogan "production by masses and not mass production" can now be realized. If the world needs a "jihad" then it should be to make people understand that this seems to be the only way of having decentralized integration, only way to preserve and enhance diversity, the only way to give fulfilment to individuals. Such an enterprise would need the best of technology. People would not live in their wells. They would be connected and yet in control. That needs a major upheaval. I do not know who would be equal to this challenge. Perhaps Gandhi did come a century too soon. Perhaps socially oriented technologists and their friends can make it happen.

To summarize, the basic challenge of today is the following: As the world globalizes at breakneck speed, the intimacies feel threatened. Intimacies are essential to being human. They have produced music, culture, values, language, art, literature, and even humour. A quick assault on these seems to human entities an assault on their existence. Much like the immune

response of a living system, the resistance is almost automatic and sometimes most virulent. Often it manifests itself as mindless terrorism. It is my view that modern terrorism cannot be combated only through military means. It has increased in parallel with the process of globalization, with superficial uniformisation of the world, with "Cola-nization", as a friend² has said. Besides the cultural assaults there are also economic consequences. All this seems to have been foreseen by Gandhi. Now it should be possible to have a different kind of globalization, without assaulting the economic and cultural autonomy of human collectivities. Globalization should be subsumed in a deeper global consciousness. On this substrate of global consciousness, call it new globalization if you like, human collectivities could live an autonomous existence, in control of themselves, not in a well any more but networked with the world and the universe. The techniques and technologies for doing this have now become possible. This is the architecture for a truly inclusive society that I would commend. It would be recognized that for this to happen we would need to develop the Web in dimensions that might not have been so far touched. We have to move in a direction where there would be a Web of people with all their diversities and not only of computers with their specific quirks.

Life Skills in the Curriculum

Dr Shekhar Seshadri, NIMHANS

When talking about education for a sane society, where do you pitch any educational programme? At the level of ideas and ideals, or at the level of the child's everyday reality? The cutting edge of this reality is the central fact of oppression. It is here that actual reflectiveness starts. We practitioners see this side of the Indian family every day – the violence, the conflict – and the ways in which the child copes with all of this.

The question raised by the Yashpal committee of 1985 (Learning without Burden) was this: education for what? It has been long recognized that education has a wider function than the transmission of subjects: Math, English and so on. For example, there have long been subjects such as 'moral science', 'family life education', and later 'socially useful productive work'. But actually there is a serious desync between school and out of school reality. There is the reality of day-to-day issues: how to negotiate with an autorickshaw driver who demands excess fare, a sub-registrar who demands a bribe. These are realities that one has to contend with. Does education have to do this, or does the family deal with it? This debate, of whose responsibility it is, is becoming tiresome.

There are also all kinds of images in the media, on the Net, about relationships, conflict, conflict resolution, about people, men and women – how are children responding to this? What are they imbibing, how are they constructing how they think, how they feel and so on? Take for example any Hindi, Kannada, Tamil film. If the woman is molested, she has only four options open to her: become a commercial sex worker, drink insecticide and die, marry the guy in question, or her father and brother must take revenge. What is the basis of the knowledge that virtue resides in one part of the female anatomy? How do children construct this knowledge? Krishna Kumar says in 'What is Worth Teaching' that schools must be counter socialisers to traditional images that the media depicts. When there is an absence of cultural discourse between adults and children, how will children construct knowledge?

Here is a list of contemporary concerns for children:

- Conflicts
- Risk behaviours
- Gender
- Peer pressure
- Sexuality
- Substance abuse

- Values
- Affiliation
- HIV-aids pandemic

Historically, we have never been free of conflict and we will never be free of conflict. We must accept this reality and work towards mechanisms of conflict resolution and that is where education plays a role.

The HIV crisis spawned a whole lot of educational programmes: sex education, values education; NGOs, national AIDS control organizations—and the teachers threw up their hands and said, excuse me, how can I do this within the regular school curriculum?! There is too much load particularly on government school teachers who have many other duties. One way to approach this problem is from a Life Skills perspective, which is a series of ten paired skills:

- Decision making – Problem solving
- Critical thinking – Creative thinking
- Effective communication – I/P relationship
- Self awareness – Empathy
- Coping with stress – Coping with emotions

Decision making spans a variety of contexts, from the innocuous to the serious. There are many examples: the dress we choose to wear or the need to relocate for a new job. One life skill can operate in many contexts: conflict contexts, gender contexts, sexual contexts, peer pressure contexts.

Conversely, many life skills can operate in a single context. In a street fight, you have to decide: do I hit him, do I withdraw? You are trying to cope with stress. More than one skill operates.

While running a Life Skills programme in a school, there is a distinction between the skill or the content, and the context in which it is applied. For example, gender is the context; gender violence is the content. Gender violence is the context; impact on women is the content. Impact is the context; interventions are the content.

This interplay between the content and context is important for the teacher or facilitator to recognize because it is anxiety alleviating for a teacher. It gives you the scope to focus on interventions without straying into areas you are not prepared for. Actually the student or individual just wants a specific piece of information to clarify an idea, and not the kind of detail you might imagine.

The triangulation between life skills and the context in which they are applied is completed by methodology. There is a need to shift from traditional didactic methodologies to experiential ones. We need to move from outcome to process. We need to shift from transmission of information to the relational mode. Traditionally education has been conceptual and we need to shift to the performative, so that we approximate the truth that children are looking for. The shift to experiential

and relational modes has a tremendous impact in education.

When the child enters the school gates, how do we know what she may have experienced at home that morning? Conflict, violence, hunger? She is trying to concentrate and the teacher says “Do your work properly.” The mind is disturbed. “You get out of class.” Teachers can and do relate differently and more compassionately with students, and this has tremendous and often lasting impact on the student.

The classroom is a collaborative community with purposeful activity involving whole persons for the joint construction of knowledge. Activities are both situated and unique; the curriculum is a means, not an end. Outcomes are both aimed for and emergent.

Theatre is a good example of a performance art which we use as an experiential pedagogy in schools for life skills. Theatre in education can be used to teach subjects, but it can also be used differently, for Life Skills education.

(Two brief demonstrations of the role playing technique to explore life skills followed).

If you want to introduce content like gender, sexuality or conflict, what is the teacher’s location with regard to the larger contexts in which these operate? Is it based on personal experience? It could be denial: no, sexual abuse doesn’t happen. Or

withdrawal: I know it happens but I don’t want to deal with it.

Or on an action dimension: what is the personal location of the teacher? What can be her response if she herself is a victim of violence? Many adults have unresolved issues, including their own biases about the construction of the difficult contexts that children have to contend with: for example, with regard to homosexuality. Is it a disease, an adversity? What therefore are the conceptual categories that a teacher must prepare for? With gender, for example, the conceptual categories may be biological sources of differences, the socialization of gender, what are gender roles, what are gender stereotypes etc.

When we do a programme in school, what is the reach and scope? Do we do one programme a year, going skill by skill? Session one, decision making; session two, problem solving? Do we go context by context: gender, sexuality? Or do we keep it open and flowing? So the school is merely a discursive space, an enabling environment for enquiry and reflection and activity?

How do you calibrate the programme for age? Here is where we use the window method. If your content is conflict resolution, session one is disagreements. Session two is bullying. Then you can come into conflict. This process gives the

possibility of building windows across age groups.

Any programme can start with generic experiences to open out discourse. My last holiday, what I like, what I dislike. Or with specific experiences, like arguments, exam tension. There are the contexts in which these experiences take place such as the home, school and neighbourhood. Institutions within these contexts such as friendships and marriage. Experiences and feelings within these institutions such as love and attraction. Then your program focus, which can be gender, sexuality and so on. This builds in comfort level both for the preceptor and the student.

What kind of support will such a programme have within school systems? Is it considered as important as math or science? Or is it extra curricular? It has to be institutionalized so that it doesn't depend on individuals, however wonderful they may be.

Questions and discussion

Q: I'm an old teacher. I have come to see that all things are connected when it comes to learning. You can move from one situation into any direction, into any subject. Including learning about yourself.

Q: Thank you for that; it was fascinating. A Life Skills teacher has to have both confidence and competence.

The quality of the programme will depend entirely on the freedom and clarity with which the teacher can talk about things like relationship. Technique, even role play which you demonstrated so powerfully, can only succeed in the hands of a confident teacher. That's the major bottleneck I see in translating what you're saying. Also, I am concerned about the separation of "subjects" and "life skills." For example, physics has a connection with my daily decision making. My second concern is, when we talk of "this" versus "that," there is the question of swing, and therefore of balance. When we swing from didactic to experiential learning, let us not forget that the didactic has a place as well. Both sides have to be looked into.

S: Yes, I agree that creating an either/or situation is problematic. Just a brief response about comfort levels. We also have had to struggle; gender and sexuality were not even part of the medical curriculum. I think the relegation of sexuality outside the mainstream discourse, and its constructions as an abnormal extension of ourselves, like a pimple or a wart, is a problem. There is also a language problem: the language of gender and sexuality is so technical that it is incomprehensible, or so colloquial that it's embarrassing. We have to build our own skills in creating a lexicon of dignity. It's trainable. Will every teacher

be able to do it? No, just as every doctor will not be able to do it.

Q: Yes, it is difficult and embarrassing but if it is important, we will have to learn how to do it. That is what we mean by “the adult as learner.”

Q: Some of us work with slum children and girl children in very disadvantaged communities. When we have to help them with their problems, we can come home very depressed. What would your suggestions to us be?

S: There is a concept of “care-giving stress,” especially for people who work with trauma. Every three months, care givers need a meeting to discuss their problems. This is recommended to take time off for

reflection. It’s absolutely necessary. You can set these up within your group or with a professional who listens and gives you a perspective so you grow from strength to strength.

Q: Thank you for this fascinating and very insightful lecture. You have broadened life skills education to encompass the whole of education. Initially, life skills began with communication, personality development, health etc. When there was a pressure that this was too narrow an area, it moved into decision making and critical thinking and other more serious things. Then the ends of broader education became synonymous with those of life skills education.



Some Questions Raised by Modern Life

Jayashree Nambiar, The School, KFI

The aim of this paper is to look at questions raised by modern life for children and educators - in the growing up of children, and in their learning. This is in many ways 'work in progress' and I draw from my experiences at the school I teach in, from the stories of my friends and fellow teachers from other schools, from children I observe and from my reading. While most of what I say applies directly to children from the middle and upper classes of society, I hope that what I say will find the value of application in the varied grounds of education that the people here represent.

While examining the questions that modern life poses for us, it is difficult to speak of change without communicating inadvertently that the past was better than the present. This is a fallacy, and I do not wish to fall into this trap. The present is different from and poses challenges that are different from those of the past.

There are three areas in which modern life has impacted the lives and learning of children that I wish to look at:

- technology, entertainment and pleasure
- a culture of homogeneity and conformity

- relationship, aloneness, silence

The crisis facing our children today is a crisis of self absorption, of insecurity and of a lack of resourcefulness.

I look at what appears and is often regarded as trivial and a passing phase in children's lives - the first area - under a magnifying glass, as it were, and view it through many facets. The other two areas I will work with briefly.

One critical aspect of technology-driven entertainment is passivity. The viewer's imagination is not actively engaged. The entertainment is a finished product which requires no effort from the viewer except the click of a button or mouse. The other aspect is that of content: the aim of the game, the manner of the resolution of conflict, the creation of an enemy and the violence in dealing with the enemy.

If these two aspects were put aside there are other aspects of technology-driven gadgets and entertainment that can be looked at. As more and more games, toys and gadgets fill the market, there is a desire to possess things and a need for immediate gratification that the child experiences. Often one sees in relationships among peers that a child's self esteem is linked with the gadgets

he possesses. The reverse is true, too. Children who do not play with such gadgets feel a sense of denial, a fear of not being equal with peers. The second is the danger of addiction. Much of the new forms of entertainment and play are designed to keep the viewer/player 'hooked' – to acquire the next version, to climb to the next level. The third is a sense of alienation from reality. The pace of the game is fast. While the background of a game may mimic real situations, the actions and resolutions are quite untenable in real life. Quite practically, time spent with the game in front of the computer is time taken away from making friends, from growing and learning through play, from becoming sensitive to others and taking responsibility.

Three quick instances might help understand these points better. Two students entirely absorbed with a particular on-line computer game could only relate with each other and others remotely interested in the game. They found little meaning in their activities at school and derived little enjoyment from any of the activities. Within a week of having the game stopped at home, the children were back to football, to smiling and talking with their parents and at school, and even interested in their subjects. In another instance a child had taken a decision to abstain from school for a year because

he found himself unchallenged at school. His parents supported this. However, when it emerged that the child was at his computer playing over twelve hours a day, the situation at home seemed both negative and very grave. In another instance a parent spoke of how her child enjoyed his time in the village – playing outside, making things, and running around. The same child within hours from the city on his return would call his friends to find out how far they had proceeded in the game so that as soon as he got home he could join in the game. And that is what he did. This was almost compulsive. Instances are plenty and there are, as always, as many instances to prove the contrary. However, what needs to be understood here is the compulsive nature of technological entertainment, the artificial atmosphere it creates that parades as true to life, and the peer pressure and sense of superiority that it generates.

Teachers and schools occupied with delivering efficient academics and student examination performance do not often concern themselves with questions of this kind. Parents find themselves in troubled spots with difficult thoughts and questions:

- My parents could not afford to buy me things so why should I not buy what I can afford for my children?
- If my child does not get what he

wants would he feel left out among his peers?

- A large number of the games that are available in the market, and television programmes have educational value and are useful.
- My child will understand if I tell him and when it becomes a problem I will deal with it.
- Is removal of the television and the computer from the house the only way out?
- My child might rebel and I might lose my communication with him if I do not do what other parents do.

Perhaps it is teachers and parents who are in crisis. And the children are the victims. I have often wondered what would give parents of children today the strength to work through these issues and take action. In cases where the parents have taken a stand, what might give the child the ability to take his position among his peers without feeling denied and lesser than them? Finally, at what age do children need access to the internet, to play games on the computer, possess an iPod or a mobile phone? As long as the child does not experience sufficient choice of activity, the passive and the accessible will be the most sought after. And as long as children do not have use for the gadget, it can only be a plaything.

As an educator I have other questions. How do we teach our

children the value of money when we want to give them expensive things every time they want them? And what about the responsibility that goes with the use of such gadgets? How do we help children be strong and creative despite the peer dynamics that this excessive consumerism generates? How do we understand the increasing anger, greed, desire for control and frustration that children feel? How do we explain to these young people that happiness does not lie in possessions or what can be bought? How do we communicate that the pace, the solutions, the sense of community that one feels online with fellow players may not be real at all?

There are some ways of addressing these issues:

- not giving children what they want immediately - delaying gratification
- offering children the experience of activities that have the capacity to delight
- creating for them an experience of the slower natural rhythms of life – teaching them to observe, watch and wait . . .

There is another area that I have been thinking about. I have been increasingly concerned with the tendency among young people to cling to the familiar. This in turn inspires conformity. Understanding that one's experience of reality is limited is very important. Another important thing is to learn to relate with differences. I

have found that these two things are very necessary and are going to be very difficult in a world that is growing increasingly intolerant, insecure and distrustful. A conscious study of the news, visits within the city and to villages, and participation in meaningful work are fertile areas for consideration.

I feel strongly that in schools children must be able to experience good relationships with their teachers and peers. Children need to learn to work together with responsibility and care for each other. They need to grow sensitively. I think children also need to experience being alone and to enjoy being silent. It is ironic that both being

alone and being silent are most often used as punishments. Children need to experience self-discovery, find creative forms of expression, and learn to be reflective.

Schools need not do more. Through their structure, schools can support active engagement and relationship with what children study and see around them. This comes from observation, listening and conversing. Can schools in the experiences they offer children help inculcate a sense of delight? A sense of delight: separate from pleasure, not self-serving – the joy of the simple and the beautiful?



Dialogue in the Primary School

Anjali Noronha, Ekalavya

It is very nice to be with so many people who are thinking about education and conversing about education. The themes of the conference have also given a lot of opportunity for reflection on our own experiences. Since I was also asked to keep this in mind to explore about the themes of the conference, I thought of talking about dialogue. I had a chance to reflect on our own experiences in primary education where oral discourse with children in exploring concepts and understanding concepts was a definite priority. But then, the quality of verbal engagement with children can be of various kinds – it can be a dialogue, it can be a discussion, it can be an argument, it can be didactic. I looked at our own experiences in this field and in the past two days and also in Jayashree's presentation. She ends with the issue of conversation – conversing on various issues. I think that it is a good moment to start looking into this issue of dialogue. Yesterday's discussions we had in small groups and the workshop on dialogue have also helped me clarify ideas.

One of the concerns from an adult perspective, as to why an engagement with dialogue, has been bothering me for quite some time. That with the best of intentions, even among like-minded

people, somehow conversations and dialogues end up being very frustrating. There is often a feeling that you are not being understood or that you don't understand the other person. I have been wondering about why that happens or what you don't mean to say. Because, any sentence can have a large number of interpretations. But, you may be interpreted very differently from what you want to say and you may be doing the same. Why don't we explore what the other person is trying to say rather than respond to what we think the other person is trying to say? This has been a constant feeling which is why this opportunity has been good for me. I will start very briefly so that we are on common ground and define the terms that we will all be using. I will be using the terms 'dialogue' and sometimes 'conversation' too in lighter strain. I will also use 'dialogue' in a more serious strain, as something in which one is exploring new understanding which gives rise to new meanings. Rather than looking for something which is already there, this would give rise to a new collective understanding. This is different from a discourse where we are trying to get to a fixed position and where we try to convince one another of our position.

Dialogue is a process in which each

participant opens himself to the other so that he understands and accepts the other point of view as worthy of consideration whether or not he agrees with that point of view. This is important in that we often reject the other point of view itself. We don't consider it worthy of exploration and that is often where dialogues and conversations stop. It is also a kind of social relationship that engages its participants in widening their horizons. Each of us has our horizons coming from where we are. We have our biases and prejudices. In trying to put ourselves in the other person's shoes, we try to see the horizon from their perspective, from another point of view. In that sense, we perhaps widen our horizons and we also construct new horizons and new meanings. So, this is the sense in which I will be exploring the idea of dialogue and then also come to the issues of what is necessary for a dialogue to happen. I will then share with you some of the experiences, even at an early stage, which are perhaps possible even in on-going curriculum rather than making new spaces or creating new spaces for dialogue.

It is quite obvious that today conversations and dialogues are not taking place very effectively. Dialogue is one powerful, yet non-violent way to resolve a lot of conflicts we see around us. It is an essential component

of democracy and if we want to continue with democracy and extend its meanings and extend it to new areas, I think dialogue is one of the most important and essential ways of extending reasoned response and to extend therefore reasonableness in society.

In dialogue, whenever we assert a belief, we are also prepared to offer reasons behind that belief if asked. You may not ask, but whenever we assert in a dialogue-like situation, whenever we assert a statement, the inherent assumptions are being offered for enquiry and if asked, we have to be open about sharing those assumptions.

So, if these are the kinds of things which are necessary, then if we have to have a dialogue with two people or in a larger group, there are certain things which are in a sense pre-requisite for a dialogue to take place:

- The concern for the other and for the viewpoints of others.
- Then, there is trust. We have to trust to take others at face value and not if we think that there is a risk involved. It may not be the way you are, but you have to assume that trust – that the person is making those statements with all genuineness. We have to have respect for the other person. Just because they differ in their opinions, it does not mean that we do not respect that opinion. We need to

appreciate, we need to value – we have to have some kind of value and affection for the other person as a whole. But importantly, we engage in a dialogue when there is a hope or possibility of something new. Often we feel that we are repeating ourselves and not getting across and if there is no hope of a new understanding emerging, we don't feel like having a dialogue.

For a dialogue to happen, the participants must suspend their assumptions for a while. This does not mean that they have to give up their assumptions. Rather they may be open, offering their assumptions for enquiry. Therefore, the assumptions are held up to scrutiny. Participants must view each other as colleagues and peers. It is essentially a conversation between equals. This is a very important aspect and perhaps a kind of subversive form of dialogue in a situation where we are in a very unequal kind of society.

In order to cultivate the spirit of dialogue, a facilitator is needed, initially. Otherwise, you can easily get into arguments and an opinionated kind of discussion. A facilitator may look at the stands of the dialogue and offer ways in which dialogues can continue, but not intervene with points of view.

There is a need for dialogue to start happening very early because in some kinds of communication, there may be a lot of talk, but little

communication. Does this happen because we do not have a wider understanding of what is required for a dialogue to take place? Or is it a lack of commitment to the process of dialogue, a feeling that it is unnecessary? We can do it on our own. Why should we keep entering into a dialogue? It is a waste. Can dialogue help in education? Can it begin in primary school?

Often people say that in primary school children are too young and dialogue is something serious and needs to come in later. But, I think that in very many ways in terms of very simple issues that concern children of that age, the practice of dialogue can begin in simple ways at the primary school level. I will be sharing some of the examples that I am putting forward as initiations of dialogue. You all could give your responses as to whether you feel these are kinds of dialogue or not and we can have discussions on that.

In the Primary School curriculum, there is immense opportunity in all subjects for cultivating dialogue. You can use pictures as initiators, you can discuss stories and poems in terms of what the child liked in some of these contexts and why he/she asked certain questions, exploring creative relationships. For example, giving them an idea of what are the uses of paper, try and think of unusual issues – unusual

relationships between say, paper and chair, why do you think that relationship is there. So, thinking out in different ways initiates various aspects of dialogues. Now, in the national curriculum as well, there is another aspect where we will probably be constrained by subjects in terms of coming to some conceptual understanding in the subjects. Perhaps, the space for dialogue gets limited and that is the reason why yesterday in the dialogue workshop what Shekhar Seshadri talked about in terms of life skills, we are looking for other spaces as if there is no scope for dialogue in general education. We must have a separate space for dialogue whether in terms of life skills or personal dialogue, sessions or cultural classes..

I would like to say that there is immense possibility in different aspects of the curriculum – Language, EVS and Social Sciences. It depends on the manner of initiating the dialogue – the perspective by which you initiate a dialogue rather than the subject per se. But, I would perhaps conclude that if the subjects are very water-tight, then perhaps the limits of exploration come very fast and therefore the free-flowing nature of a dialogue is restricted which is why we look at other spaces. Yesterday when we were looking at the child's own views and things which are important and the child's relationship with peers, friends, relatives

and so on, that is perhaps something which needs a separate space. Then I was looking at the national curriculum. The EVS curriculum at the primary school level is interesting. I think people should look at the syllabus that has been made. Many of these aspects have come in. The first theme is to understand oneself and relationships around oneself. I think that offers a lot of scope for dialogue in what is traditionally called EVS. We could also debate on whether putting that formality constricts the dialogue and whether we still need to have a separate space.

In this, the teacher is the initial facilitator and needs to have a special role. This is a big challenge. I will end with some of these issues which will concern the teachers later on. Accepting each child as equal which is an essential for dialogue is something which comes with great difficulty to teachers because of the way education has been earlier. The teacher also needs to open out opportunities for dialogue and look for them, instead of closing conversation and dialogues. The teacher and the student both need to participate in reason-responses. The teacher may not be able or ready to offer reasons, but would ask for reasons from younger children. This requires a relationship change between the teacher and the taught, so to say that they become part of one community. This is the major

challenge in developing dialogue.

Here are some examples that we have tried to introduce right from Class I. (Slide shown.) These are children's drawings and if you notice, we have selected ones which particularly offer themselves for open-ended discussions and for various kinds of interpretations. They are not static. If it is a clear picture of a girl or a boy, or a cat or a fish, then conversation tends to end there. This first page from the Class I book gives a place for children's own drawings. It gives an importance, it sends a message that the child is important, their drawings are important and things which may not be real-looking in that sense are still important to converse on.

These are some of the instructions that we have given teachers along with the book. Here, we ask the teacher not to expect only one answer in response to the question 'What is this?' A figure may be called a cat, a girl or something else for another child. Encourage children to articulate why they feel it is what they are saying it is. Encourage children to make their own pictures. Don't direct them into making what you think is a good picture. Rather, talk to them about what they have made and appreciate it. These are initiations at a very simple level and there are familiar examples. With this picture of a fish, there is a suggestion to make one's own story or ask the

children to tell their own story. One may stop at a point and tell the children to take the story forward, letting their imagination run and then extend the dialogue to the habitat and nature of a cat and a fish, of land and water animals. So, initiate to a point and as the children go along, flow along with them rather than constrict them.

This is a picture which is again taken in a way which provides a lot of opportunity for various kinds of interpretations, dialogues. You can keep coming back to it. What might the parrot be saying, where are they sitting? Understanding pictures is also important. This was in rural areas and two-dimensional pictures were a new world which these children were getting used to. So, things which might be obvious to us – parrots sitting on a tree because we see the branches may not be as obvious to someone else.

If this is what dialogues and conversations are all about, then in a typical government school situation where we have children from all kinds of socio-economic and cultural backgrounds – is it really possible? Is it a political question that we need to address? In Madhya Pradesh, a large number of teachers are from upper classes and this may vary from state to state though the situation may be similar in many states. So, taking a Dalit child's world or a female Dalit child's world on an equal footing or at par

with other children, is that at all possible in this? The other question which comes to mind is whenever we include any aspect of education in the formal sphere (because in our country, formal education system is very assessment or evaluation – driven), then it starts getting under the pressure of assessment. If we are spending so much time on this, how do we assess what is happening? What are the levels of development of dialogue? Are there other ways of assessment, should it be assessed? Are there problems in assessing some of these things? And how open-ended should the process be because education is a purposeful kind of activity, you expect something to happen out of it. So, how open-ended can dialogue be? What is the balance between open-endedness and purposefulness that we might need to keep developing in a dialogue? And on the basis of the confession that we were having in the earlier session in informal spaces, a lot of us felt that today there are a large number of middle class, poor middle class and even upper class families where both parents are working and children are alone at home because of single shift kind of schools. At least 3-4 hours at home alone and particularly in smaller towns and cities, there are no opportunities for other things. So, I think whether it is the school or the community, we need to start exploring

the informal out-of-school spaces for both sports, libraries and activity centres which run for two hours, in which children have an opportunity for dialogues and conversations to develop. We are doing some of this work in a city like Bhopal, in smaller towns like Hoshangabad and Shahpur, of running these community-based libraries where the volunteer is from the community. We train the volunteer in some of these facilitative aspects. Books are very interesting initiating points around which a lot of discussion and other activities happen. Recently, a school working for the school transformation project has opened its doors in the afternoon for children who come to school for this activity. So, the community volunteers are running it. Informal but social spaces are very necessary for engaging both younger and older children. I am talking in the context of primary schools, but youth are also included in this activity.

Questions and discussion

Q: With regard to dialogue as a life skill, what is at least one important factor to be successful in training the teacher as a facilitator? It would be nice to know what you have done in this area to train teachers. And a related question: How do we extend this to parents?

A: With regard to training teachers, the aspect of taking the child's world as

worthy of consideration and including it in the discourse is something in teacher's training that one really has to struggle with. There is a tendency, due to the teacher's own perception, of the teacher telling and leading children into something. So, opening out that space for children (and when it happens, it is differentiated), some children and their opinions will be valued more and it is the greatest struggle to get to the value of the perceptions of the oppressed or under privileged child. But, we do have such sessions with library facilitators or with the teachers and there are also tangential sessions of exploring one's own childhood or experience.

When you have a dialogue or assume that you have a dialogue especially with younger children, as it is there are too many adults —aunts, uncles, relatives, teachers and everybody else telling them what to. You are already sitting there trying to make them talk or rather attempting to have a two-way conversation. There are times when you try to do that. All these kids are really true in what they say and what they do, and they come up with something that paralyzes you sometimes. When you go with an agenda of having some conversation, or have something to flow, that does not happen in many ways and all these children are just saying 'you told me to share', 'I am not interested in sitting

with you just now', 'I want to go and break that wall' or 'I want to go and scrap something there', or, 'I just don't want to sit and talk about this'.

Q: This is more of a sharing. Separate space for a dialogue class and how relevant is it? It just occurred to me that it is absolutely important for a dialogue to happen even in subject classes so to speak, where there is a content and it is much better to convey it through dialogue rather than something else. But for me, I think from experience, I can say that having a separate dialogue class which is meant just for us to be together, the adult and the children, and share our thoughts or expressions or whatever it is, it is a 'space' that seems to create its own strong bonding between the adult and the children because when you have a dialogue in a subject class, however you put it, there is a purpose to it – that the content needs to be given to the child or the child has to learn something out of it. So, there is an aim or end in view, whereas in this kind of setting, it is more open-ended. It seems to relax certain constraints and it creates its own special atmosphere. For me, it feels very valuable.

A : Open-ended and purposeful to me seemed very important. I think 'open-ended' and 'purposeful' go together. The question would be how would you guard against certain opinions? How are we not kind of

subtly guiding it towards a certain direction? Or moving it with a certain agenda actually? How would one really guard against that seems to be the key question. I think the very definition of a dialogue is implicit in that.

Q: If you put dialogue at the same level as conversation and discussion, I feel that may be we should define these things differently. When you say 'dialogue', I think you are talking about something else rather than when you are talking about discussion or about conversation. I think dialogue is a different kind of opportunity and when we talk about dialogue between child and child and between adult and child, we need to be cautious about its purpose. If we look at the perceptions of school teachers, 'Have I been able to draw out their curiosity?', there is an importance in the statement itself about the purpose of an adult-child dialogue and therefore, we need to perhaps separate 'conversation', 'discussion' and 'dialogue' in a more careful manner. Whether we want to create a space for 'dialogue' and what kind of issues can be brought up in the sessions in 'dialogue' and whether 'dialogue' in the subject class is the same as 'dialogue' period separately. I think these are important questions.

A: In the beginning, I did try to distinguish between 'dialogue' and 'discussion' particularly. 'Dialogue' and 'Conversation' differ in terms of rigour

and seriousness. Also, according to Frere, they differ by one more aspect in that a dialogue also leads to critical action. For this discourse, I have used 'dialogue' and 'conversation' interchangeably and what I am talking of at the primary level is more akin to conversation. But, even in conversation, it needs to be open-ended and exploratory. It needs to have all the other elements of concern, trust, putting forth one's assumptions for scrutiny and enquiry is necessary. Perhaps, what we can talk about is developing conversations in primary schools and leading to dialogue; and more serious dialogue including critical action at the middle school level.

So, these are the concerns that you face when you are speaking with children who have these emotions, who have those feelings at that point of time. So, when you go with this agenda of an open-ended dialogue, the challenge is how to face that kind of a situation and what to do. When you let that flow, it is interesting to see what happens.

In levels 1-4, dialogue is an important aim as classroom competency in subject classes. We need to understand better the distinction between communicative skills and dialogue. Are we talking of the same thing? We need to unpack it a little more and may be in smaller groups. Some group will take up this issue,

because I do not think it is the same thing. The exploration in dialogue is what is important, not your speaking skills or comprehension of a cassette which you are evaluating. That is a deeper issue that we really need to understand. If dialogue is initiated in conversation development in the larger system, there is a possibility of simplification and therefore the whole spirit behind dialogue and conversation development gets vitiated. I think we need to be a little careful about that and then may be it would be useful to discuss and understand. Since we have tried to develop this kind of a child's world and it connects with your question that whenever a child wants to raise an issue, ask a question, it may be related to anything. It is basically changing the nature of the classroom and teacher-student and peer-peer engagement within the classroom which one is talking about. So, whether a

maths session is going on and they are doing an activity and something strikes a child, the space to explore the issue is always there and sensitive teachers may explore issues to an extent. They have to make a decision at that point. But, they do start exploring those issues. We do not have experiences of separate, just dialogue classes. But, we do have experiences of children saying 'I don't want to do this', and there have been both successful and not-so-successful ways of dealing with it. One has to either allow the child the space or let the child go depending on whether the child wants to speak about the issue a little more. Those are the kinds of things one has to play by ear with the situation. But, I do see those kinds of situations coming up whenever a classroom is made an open space or when you have a separate space for dialogue.

NCF 2005: Vision and Perplexities

Rohit Dhankar, Digantar

I feel privileged to talk to this audience about education, because in the last few days, I have seen their passion and concern for education.

In the last two days, I have been getting signals. The first charge is that I often talk about something which has no relation to reality and therefore is abstract and obscure. I admit I do that. The second charge is that wherever I go, I talk about the aims of education. Again true. The third charge is that I often talk about curriculum and framework. Again true.

I have a tendency of rambling. I hope you will help me make sense of what I say and also construct some meaning out of what I say.

I am going to talk about the National Curriculum 2005 and some of its critiques. There is often confusion between a curriculum and a curriculum framework. Whenever we talk about curriculum, we talk about curriculum framework and vice versa. Therefore, I would like to explain in what sense I am using these terms. These terms are by no means fixed. They are quite flexible and people use them in different discourses in different manner. So, I have to explain how I am using these terms in this discourse.

Curriculum, to me, is a plan to achieve educational aims. If we go by

what Ralph Taylor said and there are many critics of Ralph Taylor who say - perhaps I am going back about half a century - curriculum seeks to answer at least four questions:

1. What educational purpose should the school seek to achieve? One example would be to make all people loyal to the state or the King. That is a very good aim of education. Or make all people believe in God. They may sound very strange today. But, both have been the educational aims of significant systems in the past. This is still an aim of many educational systems even today in many parts of the world. It could also be to make all people socially useful productive units. This has been one of the most significant aims right in 1991, when we saw the document MLLs (Minimum Levels of Learning). You can also have an aim of making all people independent thinkers and actors which is an aim of the present national curriculum framework. So, this is one question the curriculum should answer.

2. The second question is what educational experiences should be provided to children to achieve these purposes? This simply means what should be the syllabus? What kind of subjects, what is the scope of those subjects and what kind of exploratory

experiences we should give to children?

3. The third question is how can these educational experiences be meaningfully organized in a school? This is pedagogy. What kind of pedagogy do we use?

4. How do we ensure that these educational purposes are indeed achieving the objectives we set in the beginning, that is, the educational aims?

So, according to this definition of curriculum, it should seek answers to at least four questions; about the aims, syllabus, pedagogy and evaluation. Evaluation, in this definition, is tied to the aims and not either to the content or the pedagogy. That is one way of looking at the curriculum. Now, if this is curriculum, what is curriculum framework?

A broad framework of basic principles, defined broadly which helps teachers and planners to formulate answers to these questions - that is the document which could probably be called a curriculum framework. Curriculum framework is not supposed to give detailed answers to each of these questions, but rather to give a framework of principles within which people can seek answers to these questions in their own contextual situations. So, these are the ways in which I will be using these two terms. I have taken a lot of time to avoid certain kinds of misunderstanding.

Importance of a National Curriculum Framework

In India, as we all know, states can have their own curriculum framework, they can have their own syllabus, their own textbooks etc. There is a lot of freedom to the states in this sense. So, what is the significance of having a national curriculum framework in India? This is not the same as the NCF in the UK. In the UK, NCF is a legal document which is binding on the schools and the people who are running the schools. Our NCF seems to be slightly different, of a different order. If we look at the New Education Policy 1986, it says that the NCF should be seen as a means to evolve a national system of education capable of responding to India's diversity of geographical and cultural milieus, while ensuring a common code of values along with academic components. So, it seems that it has a twin purpose. One is having something common which we can all call 'national', and therefore binds us together and the second purpose is that it should be open enough to give space to the cultural and geographical diversity.

It has a two-pronged aim which is pulling away from each other. I think that is the source of many of the debates on our NCF in the past as well as in the present.

Therefore, what we should expect from a NCF are broad principles which connect education with our polity, with our socio-cultural reality, with our economy, give direction to it and underline the concerns of the times. This is the kind of area with which this kind of documents deals.

What we should not expect from our NCF is an answer to what do I do in my classroom to teach fractions. But, if the curriculum framework does not have any principle or any allusion to how and where we can find answers to these questions, then perhaps this CF is not doing its job. Otherwise it is doing more than what is expected of it. So, this is the kind of framework in which we are talking.

This new NCF has been loved by some and hated by some others. There are lots of debating points. I would like to mention only three; they are rather commonplace. Perhaps you have heard of them. Still, I think it is worth opening a debate on them.

1. This is an enabling, rather than a prescriptive document – partly this is inherent in the definition of a curriculum framework. But then, this document emphasises this a little bit more. So, it is worthwhile to dwell on this issue more. What is it to be an enabling document rather than a prescriptive one?

2. The second thing I would like to say is that it takes a broad view of

human knowledge and to some people perhaps a more updated view of knowledge and more encompassing. But, there are also people who do not agree with this.

3. The third one is that it takes a very serious view of learning, pedagogy and its connection with the school. We will focus on these three.

Enabling rather than a prescriptive document

A curriculum framework and more particularly, a curriculum, could actually be set for the whole nation and give answers to the four questions I raised in the beginning, for the whole nation. There have been attempts like this in India. Though people say that MLLs were not curriculum documents, it was more like a standards document and for achievement testing etc.; but since nothing else was there with MLLs, it acted like a curriculum document in isolation. Therefore, one could say that it was one document which tried to prescribe everything for the whole nation. If you go back further, there was another document called MLC – Minimum Learning Continuum. This was in 1978. The MLC was more rational than the MLLs and was more open and answered the four questions for the whole nation. So, that could be a prescriptive document. Enabling document, as I have told you, would give some basic principles. But, if you

actually formulate and look at these two documents, an enabling document has two aspects to it. One is, giving people the freedom to choose, stating in black and white that you can formulate your own CF for your curriculum, syllabi and textbook. Stating that in print alone is not going to give people the ability to formulate their own syllabi, textbooks etc.

Therefore, the second part of enabling is capacity building or making resources available. So, in this framework if we look at the given NCF 2005, then it seeks rather than to prescribe, to enable teachers and administrators and their agencies involved in the design of 1) syllabus, 2) textbooks, 3) examination reforms to make rational choices and decisions. This means that this is a document which tries to give some sort of available knowledge base and rational basis to make these choices.

A quote from the same document reads: “We expect that it will strengthen the on-going process of reforms such as the devolution of decision-making to teachers and elected local bodies”, while it also identifies new areas for attention such as the need for plurality of textbooks, urgent improvement in the examination system. Now, textbooks and examination systems in our country are old and many documents have talked about this. To put what is in this quote into

context, I have to go back to the Kothari Commission. The Kothari Commission admits that a curriculum framework can only give principles and all other things should be worked out at the ground level.

But after about 100 pages, when it talks about textbooks, it seems to get scared of its own prescription and asks: How shall we maintain the national standards? Then, Rajasthan, Kerala and Karnataka might have different standards of learning mathematics. They also talk of biases creeping into the textbooks and no authentic knowledge in the textbook. Therefore, they say this problem could be solved through very well written, centrally written textbooks for the whole nation.

Therefore, the prescription or recommendation made at one point is undone at another point. That is why I am bringing in the issue of the plurality of these textbooks. If someone is allowed to formulate their own syllabi, their own curriculum in their own states etc, then plurality of textbooks would be a useful thing. In actual debates and particularly at least in my paper, which is also part of the whole literature, there was a very lively debate on whether districts could be allowed to formulate their own curriculum, whether it is possible to have different syllabi for different districts depending on their own geographical cultural

contexts. There were two views and it seems the document favours the view that given the adherence to certain principles which are same throughout the nation, given the adherence to certain kinds of standards of achievement which again could be more or less same through out the nation, every district could perhaps be given and should be given the freedom to formulate its own curriculum, syllabi and there should be a multiplicity of textbooks.

Now, this reason comes from the idea that schools should be autonomous in their decision-making, in their pedagogy. At the moment, schools are given autonomy in pedagogy – that is how to teach in the classroom. Schools are supposed to decide on their own what kind of methodologies they use to teach Mathematics, History, EVS etc. But, beyond that, textbooks are prescribed in the government schools at least and syllabi are definitely prescribed.

Therefore, there is a move in this particular document which argues for greater autonomy for the teacher and for the school. In this sense, it is not a document to be followed in total, but a framework to be debated, understood, and adjusted according to one's needs, used with responsibility and freedom; responsibility to adhere and to understand the common principle and the freedom to choose

what you like after that. That is why NCF 2005 is not a single document.

In the exercise of developing NCF 2005 document, there were also 21 focus groups which had different kinds of subjects ranging from pedagogy of different subjects to systemic reforms to various kinds of issues – education of girls, dalits and tribal children, handicrafts, art and so on. Many materials will go together with the NCF document. So, the total package is supposed to be an enabling package in the sense that it provides basic principles as well as reference material from which one can source ideas. Now, the beautiful thing about these focus group papers is that if you read them, you will find many contradictions in them. One paper may be contradicting the other and a single paper may be contradicting itself.

People who know me know that it irritates me a lot in its inconsistency. This process has made me understand that if you have a very consistent document throughout the nation, then you are likely to leave most people out. So, if you want to have something that reflects the concerns and all the strains of thinking and ideas in education, then you have to build in some sort of inconsistency in that. I am from Mathematics and this reminds me of Godel's theorem – who said that in a finite system, you can either have consistency or completeness. This

means, suppose in a system like Geometry - you have your axioms, you have your rules of inference and you can prove certain theorems. So, completeness means being able to prove all theorems which are true in this system. If you want to try to do that, your system becomes inconsistent and if you want to remain consistent, then some of your theorems remain left out. So, that seems to be applying to the curriculum document. If you want a very consistent document, it leaves a lot of strains and people out. If you want to bring every legitimate concern in, then it has to do with a certain amount of inconsistency. That is one character of this document.

Broader view of knowledge

This is the second important issue and this document actually takes a significant departure from our earlier document in defining knowledge. I know that some highly respected intellectuals have noticed and are extremely angry and we will share the source of that anger also sometime.

Let us look at the characterisation of knowledge which goes into this document. Knowledge can be conceived of as experience organized through language into patterns of thought or structures of concepts, thus creating meaning which in turn helps understand the world we live in. I might be here reading this definition to

an audience which has already bought into it. But this definition might be very unsettling for people who think of knowledge in a different sense.

The second part is that knowledge can also be conceived of as patterns of activity or physical dexterity interwoven with thought, contributing to acting in the world, creating and making things. This unsettles people even more. Let us see what these definitions imply. The first one is the characterisation of knowledge and less of a definition. But, knowledge might be trying to articulate a notion of knowledge. It says that this is based on experience. Then, it says that there is a significant role that language plays in organizing this experience, integrating this experience with one's earlier experiences. As soon as the bee stings you, you may connect these things with high disturbance, flying of bees, sting, pain, swelling and other experiences and language plays a very important part in connecting these various concepts. So, there is experience organized through language in systems that are governed by some principles and not heaped haphazardly.

Learning and its connection with the school

The third thing is that it has an intimate relationship of connection between understanding, how we look at the world, how we make sense of

the world, how we interpret the experiences. This kind of characterisation of knowledge allows us to include activity and creativity in it.

Therefore, a significant departure which is noted in the document as something new, which does not occur in any other curriculum document, is practice. Though it is available in our knowledge discourse, our curriculum documents so far do not talk about what it means to say knowledge in practice. Let us take one example. Usually pottery, weaving and carpentry are seen as crafts, based on narrow skills that can be applied through repeated practice and not involving much of intellectual understanding. Therefore, in a way, the knowledge which we seek to impart to children in the classroom is more the knowledge which could be formulated in the language which philosophers sometimes call propositional knowledge and which our subjects are composed of and often we create this dichotomy between theory and practice. We call that knowledge theory and we call these things practice and we feel that these practices are themselves not less, though they may have a knowledge base and that is the kind of ideas in which these kinds of things are analyzed.

But if we take a different notion of knowledge, experiences organized into thoughts, into concepts and structures, then it becomes possible for

us to look at knowledge in a slightly different manner and bring the knowledge of practice also in the gamut of learning.

Just for a quick inventory of things which will give an indication of this, to be a carpenter in a small community, what are the kinds of things a person needs to practice the craft of carpentry?

In the morning, when I was thinking, I listed down a few things – understanding of wood, suitability of wood, where do you get it, how do you treat it. Then, understanding of geometrical forms – table, chair, plough, charpai or household implements; ability to shape wood into those kinds of forms – cut, bore holes, fit together. You require a lot of dexterity and imagination of geometrical shapes and how they will fit together. So far, we are in the realm of a general kind of understanding of things. But, if we go slightly further, then for a carpenter to be a successful craftsman or a successful tradesman in that society, he also needs to understand the socio-cultural significance of the objects in that society. For example, a craftsman in Rajasthan may be making charpais and ploughs more and a carpenter in Karnataka may be making something else more.

Then, there are certain kinds of things which are made for special occasions such as festivals, as religious significance or made during marriages.

Therefore, the whole lot of connecting one's own craft to the social and cultural aspects of the community and economic viability of course is the central issue in this.

When we look at these crafts in a situated manner in this way, then certainly the trade of carpentry means situating the practitioner in the way of social relationships, his or her ways of contributing to the society and then it becomes a rich enough source to derive a feeling of self worth. This becomes a way of my connection as a carpenter with the society. That is the second aspect of the view of knowledge that NCF 2005 takes.

Another important aspect which was there in our educational discourse, but not much attention was paid to it was about the basis for different school subjects and disciplines. There is an intuitive understanding, there are people who understand it very well and have certain theories. But in formulating our curriculum documents, use of this knowledge has either been absent or minimal. We have been taking subjects as something God-given. This document tries to scratch the surface. It does not do justice to the issue, but goes slightly ahead.

To emphasize the point, let me give you an example here. We are all perhaps familiar with this debate between integrated curriculum v/s a subject-based curriculum. Then, there

are certain others who are votaries of the integrated curriculum which says that the child sees the world as a unified whole and does not distinguish and that these distinctions are artificial.

There are certain other people who would say that human knowledge has grown so much that without having some sort of organizing principle, you cannot handle it and you are not going to go too far. But, there is no serious attempt in the curriculum document to hint what kind of reasons can come to bear upon this kind of debate.

Therefore, curriculum framework tries to bring in some aspects of how one can think about these issues. One can call it one-sided because a curriculum document has limited space and therefore it takes only one example which is the form of understanding. That is, you start thinking about what the difference is between historical and mathematical knowledge and ways of creating and ways of validation and whether our investigation into these things give sufficient grounds to see the similarities, inter-connections as well as the special significance of each subject in the total curriculum.

The approach taken by the curriculum document is to explore forms of understanding and it gives about 7 or 8 forms of understanding which are assumed to be enlightening our pedagogy as well as choice of various kinds of subjects. Also, the document looks at the relative

importance which should be given to the subjects and the choice of specific content within each subject. So, that is another important aspect in terms of knowledge which this curriculum framework talks about.

There is another debate in which this curriculum document is attacked: that it makes too sharp a distinction between information and knowledge. Now, I know most of the people sitting here would be happy to make this distinction. But, there are also problems with this distinction, because if you take one of the traditional definitions of knowledge as justified true belief, then perhaps the distinction between information and knowledge disappears. So, any particular piece of belief which is true, which is justified and which you believe in, becomes your knowledge and therefore the kind of distinctions we make in day-to-day information and knowledge do not look very sound in that perspective.

From the pedagogical point of view, the distinction between information and knowledge is extremely important. A philosopher can live happily without making this distinction. But a teacher will find life very difficult. Though there is a slight danger of going over a very well known thing, I would like to give a small example of how this can make some difference to us and how NCF 2005 looks at it.

Let us take a sentence like “Hospet is a district in Karnataka”. Now, this could just be a string of words responded on queue. If you ask the child to name a district of Karnataka, then he will say “Hospet” and may not attach any meaning, may not have the notions of the district, but is very practiced. Many of our children learn at that level. At the information level perhaps you can say that the child can produce other relevant strings of similar kinds of things and also has a notion of what a district might be.

For a teacher to get it to the level of knowledge, you have to integrate this piece of information into the larger body of the child’s knowledge where it could be utilized either to learn something new or decision-making or new information about the district Hospet or derive new conclusions. For example, if anyone understands the state, the district and governance, then makes an intelligent guess about the language spoken there, size of Hospet, that there may be a collector there, a police chief there and several other structures. So, this alertness to connect all these things together to make a total picture and which could be utilized in decision-making, can perhaps be called knowledge. The information alone perhaps may not serve the purpose of the child. This point is made so many times in the document and with such force that this has almost become

clichéd. It is repeated too many times. I think there is justification for that also. The justification is that this is one of the biggest problems in our education system.

The last thing about the theme of knowledge that I would like to talk about is engagement with local knowledge. That is another issue widely debated. What is this local knowledge the document is talking about? We should look at this issue in a little detail. In one of the seminars, I heard a friend claiming that Dalit and tribal mathematics has different epistemology. That is perhaps taking too far the idea of local knowledge. Then, you are saying that there would be different ways of generating knowledge, different definitions for knowledge and different ways of validating knowledge. By validating, I mean when do you say that something is true knowledge? For example, water boils at 100°C or that the three angles of a triangle are 180° . How do we support that claim? So, to claim that tribal or dalit or any community has a different way of producing justification for this kind of claims, perhaps is too far and extreme a view of local knowledge and this document is not taking that view.

Another view is that could there be something called knowledge of local validity. Some knowledge which is valid here may not be valid somewhere else. The local ways of people, their validation systems might be the same.

But, people may look at themselves and have a specific knowledge in a way which is useful in that local context. For example before we go in the sun, it is good to eat onions. This information may be very useful in Bikaner in Rajasthan. There could be information and knowledge which is very important in dealing with the local geographical situations. Similarly, there could be information and ways of understanding which could be very important in dealing with the socio-cultural situations.

The document says that one has to engage with this knowledge. It does not say that one has to take that into the curriculum. It says that it is a necessary condition of learning to engages with this knowledge and to see the connection between the universally respected scientific knowledge and local knowledge and how this connection could be worked out. Also, this means that we all perhaps would agree at some point that learning is nothing but connecting and therefore, if you want a child to learn something, then you have to connect that to the child's present mental state and structure. Therefore, you have no option but to start from where the child is and all that the child brings to class is his local understanding and local knowledge. If you discard it, scorn it, think that it is wrong and comes in the way of scientific knowledge and this is inferior, then you are cutting the basis on which the child

can learn. Therefore, engagement in the curriculum, in the class, in the school with local knowledge is extremely important. This point is made quite forcefully here.

Pedagogy

Two things the document recommends are:

1. Constructivist and critical pedagogies. They are not the same and they are hotly contested issues.

2. It recommends a school where the child comes wholeheartedly, a school which is well-organized and warm and a school which gives protection and a feeling of being wanted to the child. The importance given to the school as a learning place in this document is far greater than in our earlier documents.

Academic and intellectual debates are important and people who are raising these debates are doing a significant service to the nation and educational knowledge. Sahmat has published a small document called 'Debating Education'. In that, Shamim Akhtar tells us that native wisdom of a child comes from his home. If a child is from a rich home there may be scorn for the poor and lowly. Gender bias may also be present. The function of the school is not to help the child create his own knowledge, but to divest him of the social prejudices, beliefs and superstitions.

Now, that criticism to my mind is unwarranted. It may be true that children come with a lot of biases and prejudices. But children also come with a lot of knowledge – sense of language, making sense of the world and also a lot of warmth and love. So, the child is not a one-sided entity. The child brings both and the job of the school is to divest the child of these notions forcibly and through indoctrination or through a general engagement of the mind so that the child moves slowly from one situation to another with full understanding and joy. That is the question and perhaps the critic does not see that question. He just attacks child's knowledge.

Second thing is, knowledge can be seen as experience organized through language. This notion is also very hotly debated and contested. Prof. Irfan Habib pores through the whole document, heaps a lot of scorn on it, produces no argument but pronounces his mighty wrath that this notion is not acceptable. In the end, he gives us a one-liner that if feelings were knowledge, then prejudices would also be knowledge. Now, where the curriculum document mentions feelings is that human beings in the last several centuries have developed a whole repertoire of knowledge, ways of feeling, ways of expressing, and several things. The way we feel today is learnt and developed through a repertoire

over centuries. Prejudices are also part of our repertoire which we have collected to deal with the world outside. So, this is true in this sense and again the issue is not of accepting this. The issue is engaging with them and in that sense, perhaps this is also true.

The third thing is very important. It expresses a certain kind of notion about people's knowledge. So, there are two kinds of people. Both are good. There are serious people who have a concern for India's children and their well being. So, let us not doubt intentions on either side. But, this is very important to know how people's knowledge can be seen. Again, Prof. Habib tells us that a great danger lurks behind the glorification of primitive views contrasted to scientific concepts. So, by indulging in it, one would open the gates to all kinds of superstition, infiltrating school education. So, if you bring in people's views, ideas, values, knowledge and discussing in the school, then you will be opening the gates of school to prejudices and superstition. Now, this reminds me of a very famous writer who has written a book called *Introduction to Logic*. In one of the chapters, he deals with the use of emotive language in arguments and he gives the example "that if I don't change my opinion, I am firm in my beliefs. If you don't change your opinion, you are stubborn."

"If he, who is not present here,

does not change his opinion, he is pig-headed. I think my beliefs and knowledge are no less and your beliefs are superstition." That is what I read in this. But, there is also a bigger problem. I am not going through the whole analysis. We seem to be taking a fixed view of knowledge which is in the hands of a few intellectuals and we seem to be looking at the masses in a certain manner that they need to be bulldozed out of their own understanding and should be brought to our understanding. This curriculum document opposes this.

Is this document perfect? Far from it. It is not clear, it is inconsistent, it is actually cliché-ridden. Sections of this are very weak and need to be rewritten. Language throughout the document is very bad. But, substance-wise, perhaps, this is by far the most advanced curriculum framework we have in India. If you want a better document, then perhaps we should have more time to formulate it. Perhaps January 2007 is the time to start working on the revision of NCF for 2010. So, those who want that it should be done, should raise a voice for that.

The last thing I would say may sound as if I am trying to defend the document and it is very difficult at the tail-end of my talk to convince you that I have not been defending the document. But I would still like to

share with you that I have been trying to defend certain ideas and not the document.

My purpose is not at all that. The document may be thrown out tomorrow. The purpose is the idea of an enabling document, the idea of a wider perspective of knowledge, the idea of a pedagogy which is both constructivist and critical in spite of all the controversies. The idea of people's knowledge and people's ways of understanding should have a place in the school. These are the ideas I have been trying to defend.

Questions and discussion

Q: Coming from a Krishnamurti background, in this document I hear a lot about knowledge but not about learning, 'learning' as we call it in our environs. For example, in considering the problem of local knowledge vs. mainstream/official knowledge/ science, I see there can be limitations and biases in both. But, when I think of learning as a process where we question knowledge, where we look at things afresh, where we learn to figure out our own assumptions, our own biases which seem to me as something essential that we have to learn to do and that we have to help children to do, then it would not raise this kind of a problem.

R: What Lorenzo calls learning, I call 'critical thinking', where you are questioning the available knowledge,

and ways of looking at the world and may be arriving at a different, deeper or more complete understanding of the world. Learning, definitely, Krishnamurti explains in a very rich different sense than most people, either philosophers or psychologists would use. Psychologists would use learning as a process which would culminate in some kind of knowledge or understanding or abilities. Philosophers would also use learning as making sense of the world and various kinds of ways for doing it. But then, this also has to culminate into some sort of improved understanding of the world, even if not complete, even if this is a constant process which goes on. And in that sense, I did not talk about learning, but the document talks a lot about learning, especially the whole chapter devoted to knowledge and learning is perhaps the longest chapter in this. I deliberately chose "knowledge" because, that was more contested and learning was less contested and I also did not have time to come to that, in terms of connecting it with pedagogy. Learning has been taken into account, has been talked about, but not in Krishnamurti's sense. Critical thinking and critical pedagogy have been given a lot of place in the document.

Q: Often times, we find that in terms of ideology or in practice for a large scale educational curriculum or a group of large scale educators, there is

no conflict about the things that have been spoken about being clear about aims and working out a pedagogy. The constraint comes when the whole notion of evaluation and assessment comes and how we have delivered, in terms of the other end. So, can you also share some of your insights about evaluation and assessment?

R: About evaluation and assessment, this is interesting that together with the development of this document, there was a constant debate and engagement with the CBSE because it seems the CBSE influences the assessment and evaluation patterns in India a lot and the Director of CBSE was part of the steering committee and there was a constant debate on that. You might have come to know that CBSE has been trying to make some changes giving a little bit more time to the students for papers or for training different kinds of questions which do not seek facts, but some kind of thinking on the child's part. One might find it trivial. But, there was a debate about evaluation and assessment and these people were acutely aware and the document is also aware that at least in the Indian education system, unless and until you change the evaluation system, all other things are more or less going to be the same.

That reminds me of David Horsburgh, who wrote in 1977-78 I believe, that if you want to name the

single thing that has destroyed our education system, that is "evaluation" and the more and more evil ways these theoretical evaluators keep on devising for it. So, evaluation has played havoc with our education. There is no doubt about it. At this very moment, NCERT is engaged in an exercise of developing a source book for teachers on assessment. So, how to assess which is in line with this changed definition or changed kind of pedagogy and in a different manner? One does not know how successful this book is going to be. But an attempt is being made.

There is also a lot of pressure on CBSE to change its own ways of assessment. So, the issue of assessment is alive. Solutions so far are not very effective.

Q: The value of this document will only get realized when many schools and educators get to engage with it and understand what it means and then interpret what it means for them. Has any work happened in taking this document to schools and educators? Has the NCERT done something? Has the government done anything?

R: I think we should all worry about it, whether in this document or any other document. because this is a constant issue. We are working in a district and if we want 50 people from that district to get together and think

about curriculum, then you will be surprised that there aren't any people who can connect the classroom pedagogy and curriculum and the larger perspective on education and who can formulate syllabi. So, it seems that the division of labour in our education system has become too tight and this is detrimental to further development. There are some people who will think theory. They do not know how classrooms are run, because they will formulate the curriculum framework and curricula. There are certain other people who know their subjects, they will come from the university and they will tell you the syllabi for Physics, Chemistry and History and will go back to their universities. Then, there are certain people who will be left to write the textbooks and these are again a different set of people and some of these syllabus writers are invited and then, there is the last set of teachers who are left with these textbooks.

By this time, the curriculum, the syllabus and every document has gone somewhere else. All that the teacher has in his hands is the textbook and he is supposed to be teaching. Anand's question to my mind is very pertinent. If we take any kind of curricular document, not only this, any other document, the earlier 1988 document, to the teachers, then at least a perspective on education would be

built and that is extremely important. But we all should be doing it and who should be doing it? Is it MHRD, is it the NCERT, is it the state government? Is it people like us? Who should be taking it to the people? I think it is all those who are concerned with it. At the same time, I do not think I want to get into whether MHRD or NCERT is doing enough. But, I can share with you what they are trying to do. One, they have put the whole document on the net and therefore interested people can download it. Two, they had given some money to each state to hold workshops on it and formulate their own curriculum. So, they are not saying you follow it. They are saying you formulate your own curriculum and syllabi.

Thirdly, they are having regional workshops. At one time, there were also talks of constituting a committee which will try to take responsibility to take it to various schools and teachers. But, I haven't heard anything about that lately. So, these are some of the attempts.

Q: You suggest that there is conflict between people who see discipline as integrated vs. people who see knowledge organized into various disciplines. I could not quite see the conflict because, at one level, when children are learning, knowledge is sort of integrated. But, as they achieve more depth in understanding, they do

become separate. So, where is the conflict between the two? Proficiency in terms of exploration in knowledge would necessarily lead to different disciplines. Because, each one by nature is different.

R: Regarding Vishnu's question about the integrated vs. subject-wise curriculum, you seem to have resolved the issue for yourself. You are saying initially everything is integrated and as the child grows, different subjects arise. But, there are further questions. What are those subjects? For example, in the national focus group on social sciences, the paper was no threat and for quite some time, there were a set of historians who said that history has its specific methodology and history is a specific discipline of knowledge which cannot be subsumed under social sciences and social scientists were saying what is history, but social science? There was a heated debate and in that debate arose the issue of whether in middle school you should have a separate history textbook or syllabus or should it be part of social studies.

So, this issue is very much alive and this may not look very important at this level. The second thing is that there are many people who without going into the disciplines and their nature, would simply say that this is totally artificial. This is a relevant debate. If solutions are available, it is very good.

Q: What was the involvement of

students who are currently in the system and, teachers from different schools including alternate schools? You all sat in Delhi and did this, so was there any involvement and what kind of involvement?

Q: You did talk about getting a person to be independent. Does the framework have any vision for the Indian society at all? In that context, have things like alternative models of education such as home-schooling for example, find any space at all? What about non-examination recognition in society? Have the focus groups really gone into any of these? Or has that been left to a certain amount of vagueness?

R: I will tell you the process. There were about 400 people involved in this. There were 21 focus groups. Each group had 12 to 23 members. These focus groups were on aims of education, language teaching, mathematics, science and social science teaching, education for disabled and differently-abled children, education for tribal children, systemic reforms etc. Now, heads of these focus groups interacted very frequently with a steering committee which had about 35 people. Apart from that, there were 4-5 regional workshops done by NCERT at different places. State governments were invited to hold their own workshops, generate ideas and to send their recommendations. Ideas and draft

chapters were put on the net and people were invited to give recommendations or their ideas on that.

But, I still feel that the kind of awareness and wide ranging discussions that should have been there were perhaps not there. This was perhaps better than our earlier documents. But, to my mind, this was not satisfactory. And it is a very serious question. Because, in a democracy, who has the right to set the agenda for education? This is not a legally binding document. Let us understand that this is a MHRD and NCERT document and states can say we do not want to do anything with this and they have said this. Rajasthan has said that already that we do not agree with some parts and we do agree with some parts. So, you can do it. But, coming from MHRD and NCERT, it has a certain kind of justified aura. So, who has the right to set the agenda for education in a democracy? Perhaps, everyone should be counted in that. There were representatives from alternate schools, NGOs, private schools, 2 to 3 teachers in the national steering committee and many more in each sub-group, bureaucrats and people from educational institutions like DIT, DSERT and NCERT. There were discussions with students, but not direct involvement with students. For example, my focus group held 4 to 5 discussions with students. But, let me tell you that

when you discuss with students in a short time the answers students give are those of their teachers and parents. We tried it again and again. Being a teacher, I know when a student starts being himself or herself. That is why I am recommending that the next process should start in January 2007. Because it takes a bit of time to get into discussion.

This document is very strong on the vision for the society. After the Mudaliyar Commission, this is perhaps the first document that relates education to deliberative democracy directly. Earlier, we had this inkling, but we had our preoccupation either with globalisation or with economy. This document squarely situates education for a deliberative democracy in which each citizen is worthwhile in her self, each citizen is capable of defining a life for himself and pursuing it, each citizen has the right and capability. That is the job of education, to develop that capacity to participate in policy decisions.

I can read a few things for you from the document itself.

Concern about inequality in the society. This is addressed when it talks about the guiding principles of connecting education and people being effective in their local bodies. The guiding principles discussed earlier provide a landscape of social value within which we locate our educational

aims. The first aim of education is a commitment to democracy, and to the values of equality, justice, freedom, concern for others' well being, secularism, respect for human dignity and rights. This itself is a strong vision. Perhaps, if you look at the preamble of our constitution, you will find that all these words are taken from there.

If you look at other aims, the next aim of education is independence of thought and actions. The third aim is learning independently. This also defines a certain kind of society. Then comes the ability to contribute to economic processes and social change. Then follows the appreciation of beauty. The weakness of this document is that it does not define explicitly how these relate to the areas of studies which could be done very well, but it is not done full justice.

Q: What we heard Dr. Seshadri talk about is the human dimension. I think it is common to all of us. Skills pertaining to that such as how do I respond to situations like that where I am very angry so that I am not involving others in risky behaviour or about health or guarding against sexual abuse or a range of things like that which help children wherever they are and may be even adults to handle the world in a very human dimension, does that find any place in the curriculum?

R: Regarding human dynamics and

people and children guarding themselves, the document is aware of different kinds of situations children face. But, to my mind, I might be wrong there, the document does not put the onus on children to guard themselves. Imagine a school and society which is protective, it does not mean that children should not have capability. But then, it emphasises more on what kind of school and what kind of society we are that we cannot protect our children well. So, it pays more attention to that and it takes a view that the ability of independent thinking and judgment, when it comes slowly to children, guarding themselves against abuse and disadvantages become part of it. I tell you this approach works.

But I know many schools which do not pay particular attention to this kind of thing. But, when it comes to children being faced with this kind of a situation, they negotiate their space. If the schools are open enough, they allow questioning, let children be themselves and support them in forming their own image as persons who are worthwhile and can think for themselves. Then children can actually start acting on these things. So, this is a pedagogical issue also.

Q: Does the document share enough about children with physical disabilities or in that sense, children who are in special situations? Since we are

talking about integration so much these days, does it talk about teachers who teach with different groups – with physical disabilities and teachers who teach children who are normal physically?

Q: My question is about primary education. After 1990, we see a lot of organizations getting into primary education, be it the international agencies or different NGOs or different groups with different agendas. I see that in the district where I am working, there are 6-7 agencies working. Some of these agencies do not work in coherence with each other and there seem to be a lot of contradictions. Ultimately, it boils down to affecting the teachers who are really stressed out. What is the stand of NCF on such issues? Are we really strengthening the system or creating a sort of systemic pollution?

R: Physical and differently-abled children are both mentioned in the document. There is an attention to children who need special care as well as there is a separate paper on special needs children. It runs into 40 pages or so. But the document also mentions and talks of integration, rather inclusive education as far as possible. But it does not take it to the level where it becomes a disservice, a disadvantage to

the child who has certain problems. Therefore, it is also being sensitive to the child in that sense.

In a democracy, I believe that everyone, including the corporate and whatever kind of bodies we form, has a right to come into education. They have a right to work for education or use their own imagination. Let us try to understand that if we stop the corporates by law, then immediately CFL and Digantar will be closed. Because, in the eyes of the Constitution, you are no different from a corporate who wants to run its own school. So, openness is an essential part of a democratic society. But then, we all have to work towards certain kinds of goals and within a framework. Our goals, again, could be different. I can have a school where I will say that I will train leaders for the society and I will take only the highest cream and constitutionally you may not agree with me. The document states strongly that education should be of equally good quality to all and that it should reach every child in the nation. That is the focus. But, at the same time, if someone wants to run a school of that kind, I don't think this document can say that don't allow such schools. No document in a democracy can say don't allow such schools.

Vikasana

M C Malathi

(loosely translated from Kannada)

Vikasana is located outside Bangalore in a rural area. There are thirty four children between the ages of four and eighteen. At Vikasana, there is no comparison or competition; no one-upmanship. But there is the facility to learn together. Children are the best facilitators. They help us to run the school more than we teach them to learn.

I won't describe here how Vikasana started; there is published material available about that, and about David Horsburgh, my 'guru'. We started building our own houses and classrooms, we even made our own bricks. As we helped the children build their homes, so they helped us make our homes. We have turned our challenges into opportunities. For example, we make our own educational materials. We have learned how to do it – to depend on ourselves and to be self-reliant. We look for what we want from elsewhere, and come back here and create it ourselves.

We don't label children as having 'learning difficulties', because we make materials to aid each child. When a child 'can't learn' we don't give up; we think about how to help this child to learn.

In all these situations, the children

and adults both learn while doing things together. We never feel there is something we cannot do. We don't need to talk about co-operation and helping, since it comes naturally. The words don't arise. It's not that life is always peaceful; it is the way it is.

Since most of these children are first generation learners, there is no help from parents who are passive. The positive aspect is that they leave the child completely to me; I am like a single parent. So there is no need to compromise, and I can correct any faults immediately by myself. However, it is a great responsibility, since the child would otherwise be working and supporting the family. This is the fee the parent pays.

What do the children get out of their Vikasana education? Beauty, love of nature and a sense of equality in school. David used to say, "Teach what is difficult". So I have the opportunity to be a continuing learner in Vikasana. I must challenge myself in my teaching, by taking on subjects I need to work hard at.

Since the children can see that I manage the place alone, they take up many responsibilities. This is a form of freedom for them. We don't need to talk about responsibility; it comes with the freedom.

Whatever is positive or negative in us, it all expresses itself. There is no place to hide for any of us. Sometimes, we can handle it – then we say, not bad, we are capable of this. Sometimes we cannot – then we say, well, these are our limitations. Everything that happens at Vikasana is a result of partnership. Vikasana is 70% from the students and 30% from me.

We don't need to make vertical groups formally. Since the younger and older children share the same space, the younger ones know what to expect as they grow older. Everything is visible to them; they see what they have to do and can do it, and so they move forward. My job lessens, since in areas where I am limited, the opportunity for the children increases. It is their life, they have to talk, they have to ask, they have to do. Vertical groups in this way help the teacher and student a lot.

If there is a yardstick for success, it is that Vikasana is the children's space. They have had freedom and space, and

they are independent and capable of sharing. Not one child comes back to their parents or to the system after graduating from the 10th std. – they go out there and find their living.

You may ask, can I also do this? Can everyone create a place like Vikasana? People would say to David Horsburgh, what you are saying is only theory, not practice. So David started Neelbagh to show that "I am doing it; everybody can do it." Then people would say, you can do it because you are a foreigner, or you are interested, but others cannot do it. So he trained ordinary people like us to be teachers. He taught that teachers have a responsibility to give generously. In fact everybody, be he a software engineer or a plumber, can teach ten children from around his neighbourhood. You need not be a teacher. You can do this even for selfish reasons – for your own growth and learning. The children are like organic material whose energy is all around us, who are not separate from us.

The Kanavu Experience

Shirley Joseph

It is very reassuring to be here talking with people who you are sure will listen and who share your concern. In this session, I am going to deal only with my experiences with Kanavu, and conclusions and possibilities of application should open up during our discussions. So, I am just sharing my experiences and as you all know, experiences need not make a person an expert. In my case, it has rendered me more prone to hesitation, so I am sharing my hesitations.

Here, I present three aspects of my Kanavu experience. One is the lack of dichotomy between learning and living. Second, living in nature. Of course, you cannot live anywhere else. Three, handling conflict and treating change as an organic process.

As to learning and living, we follow a very non-formal, not too academically intensive way of learning. Academics are not a very central part. That is very funny to say about what you call a 'school'. We would like to learn languages and science, we would like to do higher math, geography whatever. But then, priorities – like we have to finish paddy planting, we have to do the thatching, look after the cows, maybe give a helping hand to parents when they repair the house or when there is some problem in the

community. We do some programmes for fund-raising, gather firewood. So, when we prioritize this, there is less time for academics. Therefore it is not that we don't value academics. We do. The thing is as far as academics is concerned, we have to balance between learning with living, and learning during living. So, there is a long list of things we have to do along with academics. It feels good most of the time. But sometimes, especially during very tired days and dark days, you have this hesitation. Is it okay to make children do so much physical work, planting paddy the whole day, gathering firewood in the sun? But, all I know is, in retrospect, all the days I have worked on the land and in construction, those days look like they have been really lived out.

Another aspect is, all this learning happens in nature. How do you classify nature? We have been lucky to live near a forest, near a river, we have open spaces. So, most of the time you can find Kanavu staff, dogs, adults on the meadows and the river. That has been a very fortunate thing and it is not like you have to go for a nature walk. You are walking everyday and learning happens, not by design. It is evening and the cow has not come home and the youngster has to go in search of

that and he or she has to learn a few things about the forest at night in the dark. Maybe a little about the neighbour whose banana plantation has been nibbled by the cow. Both kinds of learning happen. Wild elephants, boars – you feel lucky about it. Since you are a commune, quite a few adults live on the campus - grandparents, one or two families – so both birth and death happens right in the campus. So, these are things you can learn and face. But in such situations, maybe because people come from close-knit communities, there seems to be an intuitive understanding of how to proceed. Even 5-year-olds can take care of their siblings for short intervals of time. Grandfathers and grandmothers are taken care of. But people in the in-between age group have conflicts, wars, pacts, silences, understandings and misunderstandings. During all these years, some kind of a conflict management has been worked out, though it is very far from perfect. People do understand each other because they do not have a choice. Most days, we have a circle time for some meditation, yoga, singing and dancing. It really helps in conflict management.

The basic question is to balance change with stability. Changes are inevitable, overpowering actually. The pace of the change is over-powering. So, how do we deal with it? Most of

my children are tribal. So, change is coming to them very fast, within one generation. So, how do we deal with it? One incident I would like to share is initially when we had folk dance programmes, I would say to the children, wear your traditional dress. But when it came to wearing it actually for the performance, there would be some excuse that “I haven’t brought the right blouse.” They would not say that they would rather not wear this dress. The non-tribal girls in the group would be eager to wear the traditional dress. For them, it was a costume and they were very happy to wear it. Last year, when the older ones were arranging a programme on their own, they had gone to Coimbatore and the organizers said that the students should design their costumes. So, they had to choose, and they opted for the traditional dress. When it was voluntary, identity was not an embarrassment.

What is one’s own role in all this? It is rather problematic. That is another hesitation I share with you. All these years, mood swings – dark days, bright days, but somehow the pendulum does not swing too far away from the centre. It is like I have a lunar calendar and the cycle has to come around. But, the trick is to know the seasons, anticipate it coming and to be able to predict it. So, somewhere that rhythm is coming. That is where the question of the future comes. What would be

our future? Competition would not be an alternative for us. It would be a waste of energy, and also when you are playing a game with self-made rules, who do you compete with? Nobody is following your rules. All we can opt for is co-operation. But, we have been very fortunate. Right from the beginning, we have had lots of friends. People, groups who want to support are many. One need not gather all resources in one place. One cannot anyway. All one has to do is to be strong enough, bold and honest with oneself to seek that help, to grow with it. That is what I am doing right now.

But still, you meet one of the parents and they share with you – people in the village ask me that my son or daughter is in Kanavu for so many years. He or she dances, sings, they speak English, know kalaripayattu, they travel all around. But, as a parent, what good does it do to me? That is one question we are dealing with right now.

What does a Kanavu-educated young man or woman do for his or her family? We had a session on that with older children and many of them felt a little helpless about not being able to support the family financially. They do contribute in small measures. Whenever there is something to be done at home, the whole community helps – thatching, repair, illness, death. But they are not the bread winners of

the family, not yet. In recent days, older ones have taken to selling a portion of their products – like bamboo works, terra cotta etc and sharing it with their family. I would not call the future insecure, but it is not insured. That is the case of most humanity.

Questions and discussion

Q: inaudible

S: We have 39 students out of which 20 have travelled to urban places and were exposed to the complexities of city life. But, most of them have come back even when they had the option to stay there, get a job and continue. But, whether this is due to the sense of inadequacy in the city or a love for their place, it is very complex, and I cannot say right now. Most of them have come back and have wanted to come back. But, one boy was very comfortable in the city. So, both cases are there.

The crafts training centre at Bidadi had a campus interview and some Kanavu students were offered jobs, and when they said no, they did not even consult us. But, this cannot be taken as a generalization. If other people could survive in a city, they can.

Q: Society being what it is, and its dictates, the students who study in your school, do they get any certificates? What is the kind of social viability they have? What kind of skills do they pick up? Is there a conscious training

towards some skill? What kind of avenues for livelihood do they have? Are they also placed in mainstream social activity?

M: Yes, they do get certificates after SSLC. They appear as private candidates for the state board. If they want to, they study further. They go to colleges. So, we do have one auditor, one engineer, GTTC, nursing. But most of them have skills for becoming plumbers, electricians, supplying building material etc. They are very self-sufficient. They do not come back and say: “akka, what am I going to do now.” They say that ‘we have to try out our mettle everywhere and test it.’ We do not have certificates and examinations, consciously we don’t. We say it is also alright. Like I haven’t used my certificates and my qualification. Our children are very excited to write exams. It is like cultural programmes. “When are the exams akka?” they ask me. They dress up, borrow clothes from their neighbours. Exam is like a festival. Sweets are prepared. Payasam is made because my daughter is going for exams. I cannot recognize my daughter when she is dressed in jazzy clothes to write the exams.

While preparing for exams, I used to tell them to get up early and not do anything else other than studying. When I was directly involved with children, they did excellently well in exams. In 7th and 10th exams, when

these children appeared for the exams in the mainstream, the teachers there asked them, “where are you all from? How do you manage?” The children were very excited, they used to learn well, solve problems, managed their time well while writing for the exams. When they suffered, I was with them. So, we spent a lot of time with each other. Employment has never been a problem for these children.

Q: It is more of an observation. These are two beautiful experiments in human capacities and sensitivity. But, this also brings out the dehumanising forces in the world today. It seems to me that these beautiful experiments and the possibility of creating more such are under threat today. So, perhaps this is a question to the larger education, development of society and the model of development we have adopted and the steady market and other forces. Can we keep the world safe for such creativity and this kind of experiments? Can the larger education do something so that this becomes possible, because experiments like this develop ideas which enrich and flow into the larger education? That seems to be the question in my mind.

Q: When parents are passive (in a positive sense), how do you cope with the burden of being the only dreamer for the children when the parents are not dreaming?

M: It is a past for me. I have left

the burden now. I am light. I also appreciate the innocence of the parents. They want their children to come to our school which does not give any certificates to their children. I even told them that I won't give back their children. I want them all for myself. They are my treasures. Because I want everything of that child's dreams, the work and everything to go on the way I want it to be. After some time, when the children grow up, they have been able to use the skills children have acquired for their benefit. In a family, as they could not read and write, they signed a lot of papers and lost their property. So just after three years of schooling, when a girl in the family started reading those papers, they had a lot of respect for us, giving full scope to me. I can do whatever I like with them. Taking the benefit of that, they are using it. They are not violent. Their way of changing is reflected in their tradition, belief, family, changing the dress patterns, thinking pattern, girls postponing their marriage etc. When there were child marriages, I used to hide the girls under the table, cover them and tell them that nobody was there.

The parents do dream. The city is coming closer. The daughters-in-law are from different communities. Their dream is sort of taken away now. I do not know if it is because of David or my ability to handle all 30

differently, I know that every leaf in the tree is not the same. So, what does the child want to be? What sort of plumber is he going to be? What values, how much he has taken from the society? Even if the parents don't dream, they give a lot of respect. They will say, 'Akka said. So it must be alright.' So, there is a co-operation for my dreams for their children.

Q: What has been your work with special children?

M: All children are special to me. There are 5-6 children with disabilities – physical and learning disabilities. Parents are not able to recognise it in their children and they argue that they are normal. I am also not an expert on it and if I want to find out what is wrong with this one child, the other 29 will suffer. So, I have to cope with special children also. I do not attend to those things. I would say that he is not disabled. There was a girl with polio. The mother always carried her to the school. So, I told her that the best way she could pay the fees would be not to carry the child, but to let her walk on her own. She did and the girl used to drag her feet. We were not so much at it to help her. Because of the physical exercise of walking 3 kilometers both ways everyday, she became a good dancer and now, she is a nurse – a very empathetic, special nurse and a superb dancer.

There was another child who used

to stammer. The whole community waited for him to say a sentence. He is an auditor today. The process was amazing. We told him that stammering was there, but that we were all with him.

There was another mentally challenged, deaf and dumb child. In 10 years of my work, he came to the third level. After that, it became too much for me. I gave the hint to the mother and she also could not cope with the child at all. I firmly believe that inclusive education has happened quite naturally.

S: As to children with disabilities, our experience is so similar. We too

have children with disabilities. Because we are also living together, at some point, it grows almost invisible. We had one child whose twin died at birth. After a few years, he had closed up and would not talk. Now he is 15. This year, he has started to read and write. He is with a group of children who have started learning Hindi and his Hindi is as good as anybody else's, though he did not learn Malayalam so well with another group. So, right now there has been a leap. His father used to play the pipe for Kanavu folk programmes and now, he plays the pipe. So, where learning is not step by step or gradual, somewhere it happens if the eco system is around us.



The Forest and the City: The Urgency of Change

Suprabha Seshan, Gurukula Botanical Sanctuary

Although I am city born and city bred, I have lived for 13 years in the forest and I've had a lifetime of love for the natural world so I hope you will excuse me if my examples and metaphors are drawn from this store. My metaphor for a good life (one that is healthy, balanced and connected) comes mostly from the forest. This is where I learn many lessons, many possibilities. You see, the forest is also a city of sorts, also a bustling centre of action, also dazzling and colourful. But it functions on entirely different principles. Let me explain.....

The forest is just there. And you are just there, a mere strand in it, intertwined with a zillion others. The forest neither threatens nor promises. No one wishes to hurt you, so you can relax. Your defences are activated briefly and appropriately, when necessary. Snakes are good teachers, as are elephants and leeches. Most of the time the forest has a mild soothing effect on your system and it does things usually beyond your sway: the work of leaves, the swell of a cloud, things growing old and dying. These are the realities of this domain and when you live here you face them regardless of how you feel about them. And when you live here day after day, year after year, you find that you

cannot fend off such realities with words, machetes and contrivances. They will come at you in their own wordless way and then, in a moment between here and there, when you pause between chores to catch the swoop of the black eagle over your sky, then you will understand what is meant by the eternal cycle of birth, growth and death. Understanding this you will be filled with calm. Resting in this calm you may come upon joy.

There is a sort of etiquette amongst all these creatures, one that you learn when you've been around them awhile. The first is the principle of awareness, which is really quite simple. Everything is aware, and everything functions as if every other thing is aware. Nobody is stupid in these parts, not even the tiniest slug. There is an acceptance that all things are equal, even if all things are not the same. There is never an indulgence in hate; in fact there is never ever any hate. You may kill, but you do not hate and you will not wantonly destroy. Your life is lived without asking another for anything, and yet you give, give, give. There are no expectations in the woods, no personal demands. You may die any moment anyway. You learn to be direct. Falsehood brings death after all. Beating around the bush might cost

you your life. Truth is not a virtue, it simply is: swift, simple, straight. You learn alertness, whence before you had armour of words, fears and attitudes. You become grateful: arrogance becomes you no more. You start to nod at grass stalks on the hill, at snails gliding upon a rock. You start to feel for things, for others, for yourself, without being sentimental.

So you start to align yourself with awareness, not with this project or that, this possession or that, this person or that, this belief or that. Life is not about projects, missions or plans. It is about relationships, awarenesses and multitudinous beings inhabiting countless worlds. The sure way to folly is to cement your creativity by becoming particular too quickly, by forging specific and narrow alliances too rigidly. The funny thing about awareness is that it brings the necessary partnerships anyway. You might find yourself in partnership with trees for instance, or with frogs and beetles. You may count upon plants as your best allies. You may tread upon dirt in full knowledge of its capacity. You may take counsel with air, or water or stone, and you may grow a garden, nay a forest, or better still a wilderness all together.

Nevertheless I am still very familiar with the city. My city experience still runs in my veins: once a street rat always a street rat! But I've been here in the woods so long that I am able

to isolate it as pure memory and view it with some detachment, like you do a movie, with a kind of fascination. Frankly, the city still intrigues me in a perverse sort of way. I find myself puzzling over it often. Some of my memories are so clear, so full of a certain buzz: the buzz of downtown, the buzz of crowds of people, and specially, the buzz of having so many friends. I remember feeling as if I was at the centre of the universe, at the point where the most wonderful and important things were going on. I remember the gay celebrations, the carnivals, the colour and dazzle of human beings. I remember the music! Oh! The music! I remember the movies, the theatres, and the endless bright lights. I remember the excitement of ideas, the heated discussions in street side cafes, the nightlife at 2:00 a.m. I loved the fact that the city never slept. I remember I was always busy, always part of a glittering web of humanity.

But I also wonder now about other aspects of the city. Like: how does the city come into being and how does it sustain? How can so many creatures live together without any one really caring? Without any one really relating to another? How do five million people function as a single biological community without any kind of natural coherence, any deeply supportive social structure? How do

people manage to live in a perpetual state of havoc, at the edge of imminent collapse? In the city, ruination is not always obvious: it is very well hidden. I now view the kind of overcrowding that happens in a city as bizarre. I also find it highly instructive. The fact that it is as lethal as it is and still so desirable. So many bodies all together in one space must lead to severe stresses. They must go insane. Then they create elaborate structures to manage this madness, to control and contain all these eruptive, disruptive forces. Have you not felt the malevolence of a city when you visit? It is so artificial, it can only survive with some kind of violent ordering. There's a strange kind of struggle for existence there brought about by this extreme estrangement, this removal from anything simple, natural, life-loving. In fact the city to me now represents a terrible and desperate struggle for existence. You die as you live. You cannot even breathe, your eyes smart as you enter, and your senses shut down and oh! the unspeakable filth! My stomach turns when I think of those sewers and the obscene amounts of waste! The shops, the malls, the advertisements mesmerize you and before you know it you are enslaved: to soulless things, to machines, to despots, to addictions and fears. So much choice, so much suffering, so much injustice. Hurts that

never heal, wounds that grow deeper and wider. Then you have laws. How many laws have healed these pains? How many have made life happier, kinder, and easier? And what about the hands that wield the law? Do they not create another order of malevolence? And all that vulgar display of money...hmm...I won't go into that, I have a lot to say! So this is what I also think about the city nowadays.

Thank you for listening to that.

The Sanctuary's main concern

I have, over the years attempted, along with many friends, to generate an exploration into sense-based learning and nature-based enquiry. I do not know what it means to run a school or to be accountable to parents' concerns about exams or to address the numerous skills a child must have for the exigencies of livelihood. But, from my own life, and that of others, I have known the great joy and relevance of physical health, the fun of direct observation, the confidence from widening and exploring multiple ways of functioning, the warm feeling of responsibility for other life forms and the incredible sense (physical, tangible and active) of being alive, which for me has originated from close contact with wildness and then spread to other places and situations. The beauty of nature cannot be replicated by human contrivance or ingenuity and it would

be a great pity if a whole lifetime were to pass by missing this.

When I look at the crux of our concern and of our work at the Sanctuary (and here I include the wider field of adults and children who have been part of the School in the Forest) the thing is really about: unfolding the beauty in creation and allowing that to act in the life of a person. Are there techniques or methodologies to this?

I now have a series of confusing and contradictory things to say, because I do not yet have any well formulated concepts. I find it difficult to speak coherently about the role of nature as surely the intrinsic meaning and beauty of the natural world has a fresh living quality to it, it is very immediate and direct. A discourse on whether it has meaning or not, or its "role" appears to be self defeating. In fact the title of the conference is a problematic one for me because we have two subjects: we have nature on the one side, and education on the other and we are being asked to find a link between the two and all this in the context of bringing about a sane society.

To me this is as absurd as asking, what is the role of air in my health, or the working of my heart in my body, or water in my cells: I really have only one thing to say about this: without this I die.

Or another way to say the same thing: I am nothing without the rest of creation.

If we are calling for discussion on this subject: is it because it is not obvious? Is it that our place in the natural world, in creation, is hidden from our awareness somehow?

Or are we calling for reflection because we are slowly becoming aware of something else: we are becoming aware that our species has broken its pact with the rest of creation.

One of the things you learn when you work with living things is the degree to which awareness is not held by one of another only; it is as if there is a collective field of awareness and that all organisms function in awareness of other forms. While you and I can sit here and be unaware of each other or a passing bird, it is highly unlikely that that bird is unaware of you. Human beings who have grown up in natural areas also have this high degree of alertness but they are also becoming a rare species.

I would say this awareness, this mutual recognition of each other as living entities is part of the pact of life: an exquisite attunement of one organism to the life of another. And when this is dulled or broken, the price is brutal: in the animal world the price is death. Now of course we have it in some degree in crowded city streets, that through these moving multitudes of human beings we can find our way and we can only do this if some part of us is aware.

But how many of us have eye to eye contact with another species? Our amazing eyes that have evolved in connection with the life and movement of other creatures are now regulated by the vibrations on a computer screen. Once used to scanning the far horizon we now look at the glaring lights on advertisement hoardings. Once swift and precise now blurred by words and videos. Once reflected in the eyes of monkeys, tigers, snakes and mantises we now are reflected only in each other's eyes.

And then again, what about a true miracle of creation: the human body, the human mind, human sensibilities, any discussion that is not inclusive of this, tacitly or otherwise, becomes counterproductive, and especially in a discussion on education, and in the context of a sane society.

Because all these are in peril, as are the rainforests, the coral reefs and the fresh mountain water. Not only are our wildernesses in danger but also our eyes, our ears, our noses, our sensitive skins, our expansive lungs, our elegant and upright bodies, our wiry and supple strengths - the profoundly embodied intelligence which gives rise to an awokeness and a beauty that is uniquely ours, our capacity for joy and love and our own vital living energy....this humanness that is closest to us, that is us: this is in great danger.

Our lack of awareness is reflected

in our language. The things we speak about and talk to each other about and share are almost completely about each other, rarely about the koel on the gulmohar tree or the gulmohar tree itself. The only other living things we have real contact with are cockroaches and rats and pests of all kinds! Talking about natural history is the domain of specialist science. It is not everybody's business, like it was once. The knowledge base for all members of our species was significantly composed of the lives and habits and places of all other living things.

Our species in my opinion has broken the pact with creation, not so much by conscious choice but rather by falling too much in love with itself, its own richness and beauty, its astonishing powers. Its orchestration with the cosmos. With artefacts of its own making. With words, images and technology. With symbols.

And this has become an obsession with itself to the degree that it shuts out the rest of creation, and then still further it divides and splinters within itself. And then by turning so sharply inwards, harm and havoc are inflicted upon the earth, upon all.

This turning inwards has enormous and very far reaching consequences. We even seem to be able to operate outside of nature's laws with our technological developments. We seem unique as a species to be capable of

stewing in our own filth. We seem to like poisoning ourselves and our environment. We seem to like killing each other. We seem to want imprisonment. We seem to have a very high tolerance of disease and unhappiness and disturbance.

I have just come from a meeting in Chennai where a gathering of fifty senior forest officers and fifty scientists and environmentalists spent a day together, confronting the colossal crisis on our hands. There is only 3% of the Western Ghats forests left for instance. 92% of all wood harvested in south Asia is for fuel.

So my questions in the face of all this are:

- What is our actual and living relationship with nature? How do we conceive of our place in the natural world? Do we exist in relationship?
- What worldviews are we holding? I suspect that the ones that inform our thinking minds (such as – all is one, or everything is interconnected) may not be the same as the ones that we act from (e.g. I am more important than anyone else...) Or, “Nature must be protected” on the one hand and, “My desires must be fulfilled at all cost...” on the other.
- What is our understanding of the way our lives have changed with the successive waves of technological improvements? How do they alter

our experience of daily life? And how does it change our concepts of self, community, nature, time and distance? How does technology affect the way we learn, what we know and what we are capable of knowing?

One of the most interesting puzzles of our times is that we “willingly sleepwalk through the process for reconstituting the conditions of human existence...In the technical realm we repeatedly enter into a series of social contracts, the terms of which are revealed only after the signing...” I am profoundly struck by the truth of this. We never really question the huge changes that are occurring in the world, not enough anyway. Willy-nilly, things catch up with us. Why do we allow this to happen?

With respect to education (many of my closest friends are the best of educators), I am uneasy with just about all forms of schooling, and I feel that the educational system is directly responsible for the destruction of our world. And I wanted to ask this yesterday, can I make an appeal to the national schools’ authority, to close all schools down unless they were nature schools or music schools, nothing else in between. Our world is burning, and why is it that we don’t see this? We need every single one of your students to go and do something.

So is this sense of urgency shared? Can we afford to lose our world in our own lifetimes, or is this something that we just accept as a fact and get on with it, get on with our math and our computers. I'd like to end with that.

Questions and discussion

Q: inaudible

S: Venu is asking me to describe a typical educational programme. A lot of people come to the sanctuary, so the educational mission is quite large in terms of the numbers of people we deal with. On a daily basis we have people from Wynad, North Malabar, coming in, schools, fourth std, seventh std., nature clubs, all first year botany students in North Kerala will come to us once a year. All NGOs would have come to us at some point or another, people who work with Adivasis, organic farming...the garden is open to the public which means that anyone between 8 and 5 on any day will be given a guided tour of the native biodiversity. Depending on the level of interest of the group one or the other of us will engage with them. Sometimes it is the local marriage party who decide that they want to visit, then we will just give them a quick tour. But sometimes it will be a school that wants to show children some of Wynad's native plants, so then we will explain that to them, show them this used to be here, we used to see it in your land, what's happened in the last

5-10 years to nature in Wynad. And all this is done in Malayalam.

The educational programmes that we've been interested in developing but are constrained by facilities and also the nature of the experience itself cannot be done on a large basis, I feel, is with schools like Kanavu, Vikasana, CFL, all the Krishnamurti schools and some other schools that come. Children come and stay with us and the idea is that they have a sense of what it is like to live in such a place. So the things that we all do have become part of our educational programmes. Between us we have various interests and we live in this place with our interests, so we share that with the children. It seems that this is actually quite a nice mix of things because we're people who like to do things with the body, we all have some form of interest of concern with either plants or animals, we're working on trying to understand natural history, there's the community life, the kitchen, the farm, all these moments in the forest and how do you take children into the forest in a way that they have a significant experience that touches them. So the day is then all these things put together.

CFL kids stay with us for up to five weeks, we've done long term nature study projects with them, so the picture of the children with the poster – 11 year olds spent five weeks with us – at that time they knew nothing

about birds – and in this one month they found 138 species of birds, and knew every single habitat and diversity of species.

Q: I don't think I understand. It seems that obviously a very important work is going on and our disconnect with nature and the natural world and unconcern, our dependence on the ecological balance are very important issues and well underlined. But I do not know whether it is possible to eulogize nature as utopia and pristine heaven. I do not know whether we were happier when our eyes were gazing at the horizon which we did not know. Horizon is very much a concept which humans evolved, and we feel proud looking at; it is specifically a human concept. Similarly I do not know whether nature is less cruel. Nature may not know the difference between cruelty and not cruelty. But humans, once they become conscious of cruelty, perhaps nature, outside in the jungle, is much more cruel than the cities. Let's not close our eyes to that side. Bringing concern and sensitivity to nature into education is extremely important. But when we go overboard in eulogizing some natural justice, then perhaps there is a problem. I do not know whether I understood you correctly.

S: This is an FAQ. I know I'm gravely in danger of romanticizing something. But I don't think the cruelty

in nature is the same as the cruelty in the human species. When you've seen something killed in the wild, it's very swift, it's finished and everything goes back to normal. It's not a sustained hatred. So it seems that there's a sustained hatred in humanity, which is what I'm concerned about. It just goes on and on. There's a kind of relentlessness to it. As a species, we're doing it to ourselves, let alone to other creatures. So in very few of the social animals do you find that, like the bonobo chimpanzees.

Q: You want education to go back to nature. So I want you to stress on that a little more: how only nature is going to help in the complete upbringing of a child rather than depending on these educational institutions for their lives or their security.

S: Let me try and use the example of a plant. For a plant to grow well, it has to have good roots in the ground but it also needs light. And for me nature is the ground. If we're not grounded in a place, in relationship with other living things then what kind of a life is that. At the same time to me the question of light for a human being is really education. So that's how I see the two working together. You cannot have a plant just growing on light, there are plants that have adapted to those conditions but even they are rooted in a matrix. So I'm not at all

saying that a life in nature is about sanity. I'm a perfect example of how it hasn't achieved that! My mother will say that I'm not an example of someone who has lived for 13 years in the forest, which means the nature of awareness is that it's actually immediate for that moment, and how can you translate that awareness into another moment in time when you are dealing with something else? So there seem to be other things that kick into place. Nature itself does not create a sane human being, I do not believe in that equation. But there are things that happen in nature that are just good in itself. You do yoga because it's good for your body. You listen to music – why? In that same way nature is something in itself that is important and if there is an educational support where adults consciously engage with this then there is a possibility that some of these things like alertness, sensitivity can also be transferred or broadened to a human context.

The other thing is that I don't think we can have true material security without ecological security. That's the crisis we're in right now; we're all going to be in the soup. And that's because we've lost our connection with nature. So, true material wellbeing has to have some kind of ecological health around it. Previously, when a civilization or community has destroyed or eaten its resource base, they've had

the chance to move somewhere else. We don't have that chance anymore. We cannot think of some other place where we can get our resources from.

Q: Thank you for that presentation. It was really quite wonderful and very moving I felt. I wonder if we realize when we bring in criteria like cruelty what pitch we're at and what the state of the world is. I don't think we have a great deal of choice. The point you're making I think which I would agree with entirely is that there's a balance in nature. Things kill each other but then it's over. They don't store hatred, they don't store resentments, or wounds, or deep ideological divisions. There is in a way no ecological problem. Nature takes care of itself. There is however an enormous problem with human consciousness. And it's human consciousness and its impingement on the environment and its sundry workings which I'm afraid are much too complex to go into in just the remaining time that we have. Although we've touched on it in some of our groups I believe. This consciousness, its divisiveness, its entrenchment, and its deep conflict is really the issue as I see it. I think it could be a paradise actually, and human beings have often dreamed of the paradise, or thought that Man was born in paradise. But he fell from it in some sense. He became shut off from it and that sense of being shut

off, being alienated seems to have gone on exponentially. So the longer the time, the greater the alienation, which is also a point that you've made. So I would like to see in schools in particular, because I don't think schools are going to go away, nor should they – I would like to see a much more thoroughgoing examination, as soon as young people are ready and as soon as we're ready, of those mechanisms in consciousness which have brought about these divisions. It's a long topic, a deep topic, a lifelong topic, and takes a lot of investigation and enquiry. But I think that's where the difficulty lies; nature itself is in almost all instances beautiful and self regulating. It does not create a problem and it would not destroy the planet, but human consciousness in its interaction with that nature, and its interaction with other human consciousnesses, has indeed brought us to this pass. And as you say the house is burning. Thank you.

Q: I'm speaking as someone who is running a school and trying to develop an education and I want to look at two phrases: nature in education - which we quite thoughtlessly gave you as the title for your talk, and education in nature. And I just want to share with you all, that I think both for the sanctuary and for us, this is not an end point or a formula that we've hit upon. The balance between nature in education and

education in nature. And Supi's been challenging us and we've been working with how do we put those two together for the right formula? Formula is not a good word. Because when they go to the sanctuary there is education in nature, they do math and English and stuff like that in the forest and when we're here we try and put the appreciation and awareness of nature into their education. But it has to be a seamless whole and we're just working together towards that.

Q: I think there are two truths. The truth of nature and the truth of our lives in and outside nature and somehow we have to live compatibly. Because nature has its relentlessness too, the annual floods, the tsunamis, the other natural disasters that totally devastate life without any reason if you wish. And our own consciousness to be with that nature and accept it as part of nature. I think we have to think about both truths.

Q: Thank you very much for the moving presentation. This habit of looking at everything from a human centric perspective - What do you think is the ecological niche of human beings?

S: It's that of a pest. Vermin. I think all ecologists are looking at that question now. How do we as a species fit in with the rest of the living matrix. We're not separate from that, all biological drives are going full force in

the human species as well. And all this is an outcome of the living force, it's not actually separate from that. But here we are with our various sensibilities, our concerns, and we have to ask whether we need to go this way that we're heading. My question is: I would prefer a tsunami to this endless disaster that I'm seeing which is going on and on and on for the next god knows how many millennia. The forces that we have unleashed are going to be like a cancer. So we have actually no time and that's my concern also. We do not have time to sit and figure these things out. We can't be Nero playing the fiddle while the world burns. So the question of whether the world is cruel or whether we are compassionate, all these two truths, I think they are ongoing enquiries and I'm trying to narrate something of what I experience in the forest, which I think is important, but I also feel that we have to engage with this question of this time that we're in.

Q: It seems that our very existence itself is of great significance. The purpose oriented life, the accumulative process, seems to be coming in the way of that. What's your take on this?

S: You mean, are we just doing too much? Striving too hard to achieve something that is actually simple and just here? I would agree with that. So much of happiness is just here. We do so much to achieve it at some other stage.

Q: Sorry for speaking again. I would not like to open a debate but I would like to point out two philosophies coming into play here. In a lighter vein, if human beings are pests, then we should not worry. The sooner they are extinct the better and nature will be in its pristine purity again. The second thing is, I think when we are asking whether nature is that cruel or nature can have this sustained hatred, perpetuating atrocities etc, I don't think we are asking a fair question. Because human consciousness comes with a price. When we start speaking language we start expressing ourselves but we also get a means to hide our motives – we can tell lies. Similarly when you get compassion, and animal compassion is qualitatively different from human compassion, then simultaneously you get hatred and if you want to absolutely do away with hatred, you will get a 'sthith pragya' who will be devoid of compassion as well. What I am trying to say is we are imposing human consciousness categories on nature and then trying to compare which one is better – this is methodologically and conceptually wrong.

Let's also recognize that this concern for nature is basically for continuance of human species. This is very self-centred. If we remove human beings from the world then you wouldn't know the difference between

the desert and the rainforest. Because how a place which is teeming with life is better than a place with no life, simply when you look with human eyes the difference comes. So let's recognize the centrality of the human being. I'm being very arrogant.

Let's try to see what you said, very validly I believe, that ecological balance and certain harmony is not only for sustenance but also for ourselves being happy and remaining sane. And I think if we move towards that without creating a philosophy where we say that nature is the original pristine 'swarg' etc, then perhaps it would be better.

Another thing I would like to point out is the first idea of heaven in man's mind was the first seed of alienation from nature.

S: Very briefly, no earthworm, or elephant or fern, no living thing, lives in an earthworm lives in an earthworm centric world. So I am not proposing at all that we don't live in an anthropocentric world. I'm saying actually to be truly human we need everyone else. And so since the topic of this conference was the sane society, I feel that for us to have a good society one of the key factors that we have to bring into our world is nature. I feel that we cannot have a healthy human world without the rest of the world. So it is entirely anthropocentric, but it may not be selfish. It may be

that we recognize our inter-linkage with other species and we recognize our mutual benefit, and we recognize the cruelties and violences as well, but we try to move forward together.

Q: I want to face some reality here myself because I'm thoroughly moved by what you said. There are some spaces – living spaces beyond nature – really ugly buildings and deserts and so many things that you are part of. So I can't kill myself today and say that nature is going to be there, nor can I go ahead and destroy schools because I believe they need to exist. I'm just putting myself as a responsible person for this. If I am sensitive to that, just as much as people who are not sensitive to nature need to take an account and need to put some effort, I also feel that people within the nature context who are highly sensitive and sensitized to that need to put in that much of responsibility as well into action. Why I'm saying it is, it's beyond a feeling. Right now it's two ways. I wish there were more programmes.

S: But there are 600 million people in this country today who are living in the world of nature, bearing the burden for the rest of us. So I don't see myself as an environmental educator – the only person in the world bearing the brunt of things. But there are so many people and there is the land. And there are the forests that are actually bearing the weight of

human excess. There are fantastic things about human society and I think those we need to nurture. But then again that's part of the problem, we start to say they are the people who need to do that work etc.

Q: Just to clarify, I am not talking from the background of compartmentalization, I'm talking from the background that some of us are just less sensitive than the others, and therefore we just expect that some things are laid out to us clearly.



The Small Group Dialogues

In our experience, when discussions take place in a non-hierarchical group of about 15 to 20 individuals, a different quality of engagement and seriousness becomes possible. Small numbers ensure that each person has a chance to participate, even those who are intimidated by ‘public speaking’. There is a greater chance of the group focusing and going deeply into questions, and the flow of meaning is enhanced.

At the conference, there were ten small groups of about 15 members each, who met over three sessions following the morning talks. Each group had a moderator, an experienced educator whose role was to facilitate coherent and open dialogue. The idea of a dialogue is that ideas and opinions are put forward in a tentative manner. The point is not to arrive at a consensus, nor to persuade

others, but simply to listen and explore. This process is by no means easy; the participants came together from very different backgrounds and with different assumptions. It was inspiring to see how the flow of communication sustained itself despite these differences.

The dialogues often followed the themes of the morning’s talks. Our moderators took notes and summarized the main threads of discussion. We are immensely grateful to them for the energy and commitment they invested in the process as a whole.

Groups three and four consisted of teachers from government schools in rural Karnataka. Their dialogues took place in Kannada, were extremely energetic and impassioned, and often went on late into the night.

GROUP 1

Several important questions were raised by the participants.

- How do we understand education?
- What is the role of the teacher?
- What is the place of “autonomy” in learning (in different areas: for the school, for the teacher and for the student?)
- Looking at the social problems around us, how can schools be organized and function differently?
- Are teachers fundamentally differently located from students?
- Can education help to uncover what a child’s “intrinsic” purpose is?
- Can schools enable children to really “live” their lives?
- Is dialogue completely open ended or does it need to reach an end?

Strand 1:

“Education happens in and outside of school.” How are the two to have coherence?

Teachers need to get to know a child, his/her background and social context before engaging him/her in a curriculum. Relationship with the child is crucial for meaningful learning to happen.

The teacher also needs to be aware of his/her biases and assumptions about children, and to be aware of the tendency to judge and categorize.

Can a teacher have “unconditional love” for a child—that is, accept him/her just as he/she is? The realities and difficulties of this were explored in detail. Parents have set expectations from education and schooling. Their love too is not unconditional.

Can teachers and parents work together in the education of the child?

Strand 2:

Teachers also need to be critically aware of the problems and issues in the child’s social context [gender disparities, media and peer driven consumer attitudes etc] and to draw the children’s attention to these in an appropriate manner. Teachers need to help children to think and take a more considered decision.

Strand 3:

The teacher’s actual work with children is always in a specific context or situation. Though this may be affected by prior ideas and thinking, it is how the “brain and heart” respond in the moment of doing that matters most. Are we then in touch with what is happening in relationship with each child and in taking decisions in the live context of, say, a classroom?

Strand 4:

There is a need for teacher training

and a listing of the qualities of a good teacher (wide capacities and deep human qualities). Can these be trained, learnt by teachers? Is it necessary to have a BEd to be a good teacher?

How can what is being attempted in smaller, “free” schools find its relevance in mainstream and government aided schools, which work under so many constraints? Can we see this in terms of “degrees of autonomy” and “degrees of constraint?” Can teachers not make some difference, whatever situation they are in? There also needs to be pressure built up for reform, for greater autonomy in the system as a whole. Education needs a revolution; but since it is something so deeply embedded in our psycho-social landscape, it may be a slow process on a larger scale. Can we begin wherever we are, create spaces and a synergy of deeper understanding and purpose?

Turning to the NCF, the discussion moved to the following issues:

- There is a need for teacher autonomy in making choices about teaching/learning material: Which books should I use? Or should I use books at all?
- Teachers in mainstream schools function under many constraints: prescribed books, syllabus coverage,

inspectors’ reports, management attitudes, government funding criteria, parental expectations etc. There is a need for reasoned dialogue or fighting for appropriate autonomy, perhaps using NCF as a support.

- As teachers, we also have our own inner constraints: our anxieties, our confusions. These may be operating even if there are few outer constraints (in so called free schools). We need to be aware of our inward responses too.
- Can we be aware of our own biases as we convey messages or values to our students? When students begin questioning cultural givens, or take decisions contrary to expected norms, can we respond with a sensitive engagement, neither suppression nor a laissez-faire attitude? Only then would we be working towards one of the aims of education: helping students become independent in thought and action and responsible for themselves.
- Lastly, fundamentally, are we really different from our students at a human level? We too have our confusions, uncertainties etc. Awareness of this would make for greater sensitivity and humility in our dealings.

GROUP 2

The discussion began with the purpose and role of a life-skills curriculum for schools. Two participants described their experiences: one of a life-skills course taught by ‘experts’ without involving the school teachers, and the other of life-skills taught as a subject with a text book. From both situations it emerged that a fragmented response, disengaged from reality, was undesirable. If the very aim of education involved finding a way to live, negotiating social space, learning not to trample on others’ lives, then would a course in life-skills be at all necessary?

On the second day, the discussion revolved around the role of technology in children’s lives. Technology for information dissemination and as an equalizer in society is separate from technology-driven entertainment. In the latter case, the power of technology is linked to its user-friendly nature, the globalised market economy, its capacity to function as a hideout such that children may not have to relate with real people in situations.

An interesting insight was that technological gadgets are learnt at the child’s pace and therefore she experiences an ‘I can do it’ positive reinforcement.

On the final day, the discussion was on issues raised by NCF 2005. The group examined

- its efficacy, given that it’s not a legal document
- the basis on which it’s constructed
- responses at the grassroots level
- its approach to sensitive areas such as comparison, punishment and prejudice

A significant question that emerged was the involvement of local knowledge, resources and people in the school’s curriculum. The difficulties of involving a local into the vision of the school and that an artisan may not be a good teacher were examined.

The third area of discussion was around teacher training and teacher growth. The following points were brought up:

- The role of an outside agency in bringing change
- Ways of sustaining processes once initiated
- Teachers as multifaceted individuals with a certain pride in the profession
- Teachers working collectively, free to act and choose
- Remuneration

GROUP 3

(Karnataka rural school teachers)

The group considered the State system of education. There were many criticisms.

- Too much importance is given to position and authority, promotions and salary increments
- There is corruption
- Transfers are arbitrary
- The system treats teachers very badly

Others felt the system shows good intentions in the laws that it has made. When questioned about functioning within the system, many people said they could do what was necessary even from within, working with responsibility and enthusiasm. Overall there was surprise that one could evaluate the system.

On the second day, the group started with three statements.

- Teachers should understand what their responsibility is and act accordingly. It is up to the teacher to fulfill these responsibilities on his/her own. The group discussed the relationship between community and teacher/school, and talked about what makes the community support or not support a teacher. A teacher who works hard will obviously be supported by parents.
- They shouldn't be cruel to children. One participant commented that a young child hears "no" more often than "yes." This led to a discussion: "Can we leave a child free?" There

should be a relationship beyond the formal one in the classroom, and many examples were shared from the teachers' experiences.

- They must recognise that parents are like teachers and involve them in the education of their children. Maybe we should conduct parenting workshops.

Discussion on the third day focused on the National Curriculum. Teachers felt that education should be decentralized to the district level, and that they should have freedom to create the curriculum at this level. This means that teachers cannot limit themselves, and have to be learning all the time. Two questions that came up were: How do you evaluate if you don't teach from textbooks? How can we help a teacher who has the baggage of his or her ideology?

The topic shifted to "Educating for a Sane Society." How can we be sane when there is corruption and violence? How can we say that society has spoilt us when we are pessimistic, anxious and unsure about how to bring up our children? To deal with all this, I need to be sane. There is no question of being a "good citizen"; that is ideological.

Education should be more than reading, writing and arithmetic, otherwise school is no different from a factory. There should be a link between the individual and society, and reflection is the link between the two.

GROUP 4

(Karnataka rural school teachers)

The session opened with an exploration of the objectives of such a discussion. They are: to express oneself, to clarify and discuss ideas raised by speakers, and to have a dialogue with each other.

The group spoke on the effect of the media on rural children. It was felt that among the rural poor, only television has made inroads. In fact, some teachers from the most remote villages felt that it was important that children view some television programs, since it is the only source of information. Instead of censoring television watching, we should have courses on media literacy and discriminating viewership.

It was also recognized that this virtual experience is a very poor representation of 'real' experience.

The group then took up the topic of dialogue with children. Is it conversation and the skill of talking? In time, the concept of dialogue developed further, and it was interesting to note that when people spoke about dialogue, they were referring to their experience as parents and not as teachers.

The group concluded by saying that children's habits depend mainly on the lifestyle and attitudes of the parents. Hence, the starting point in this problem of media has to be the parent and the home. Also, a connection between the question of media and dialogue was articulated very clearly: dialogue is one effective way of handling the media problem, or for that matter any problem.

The discussion ended with the feeling that as teachers and parents, we have to be aware of issues and respond immediately and continuously.

On the third day, the teachers wanted to understand more about the NCF and the concept of autonomy. There was a feeling that the NCF will definitely help the school and the teacher to experiment with original ideas. The group also felt that we do not participate actively enough in the democratic process. We should read the NCF and share its contents with others. Thus the group saw the connection between the basic principles of NCF and democracy in practice.

GROUP 5

The group touched upon the following questions and points:

- How do we educate for an open mind? How much time can we afford and are we willing to give to this?
- How do we deal with our own conditioning and problems, and then the child's conditioning and problems?
- The 'teacher' and the 'school' position has some arrogance to it. Rather than posit a goal and impose it, we should learn how to respond to situations in context.
- On the second day, the topic of how to handle the 'threat' of technological gadgets came up spontaneously. Some points touched upon were:
 - There is more work needed to make the young sensitive to the way TV and other technologies impact us.
 - Not buying a TV is a proactive decision, but rather than controlling the exposure of the child, can we make her able to make sense of what she receives?
 - We create a society and lifestyle where the only thing for children to do is watch TV, and then we try to solve that problem in itself, rather than looking at its root.
- A quality of balance and discrimination is often poor, even in adults. Can discrimination be nurtured?
- There must be a balance between protection and exposure, and if protection comes as an external imposition, it will be resisted.
- We treat the young at times as if they cannot and do not want to understand. Is this 'wanting to protect' an arbitrary adult agenda?
- We may also need patience to let the young go through a certain phase, but we may need to keep engaging them in this time. There is the danger of 'damage done,' and it is too late after several years to go back.
- The aim of education may be to learn together how to find an intelligent balance.

On the third day, a local teacher from a rural school asked that we consider his plight: to have to push some 100 students through an English exam with no resources. He asked for practical suggestions. There was the case of two children who dropped out of local schools and the question was raised of how the NCF 2005 can be made to reach the grassroots level.

- Fear is probably the greatest obstacle in learning; it is important,

- both in rural and urban settings, to remove fear from the atmosphere.
- Some practical suggestions were given to the local teacher: teaching after hours, teaching other subjects in English, asking for the co-operation of the management, discussing the issue with the children themselves.
 - The teacher pointed out many practical difficulties and the pressure and lack of support he feels. He described the rigidity of the structure and timetable imposed by the government. Thus it was recognized that it can be 'easy' to give solutions from a secure background.



GROUP 6

Day One

Understandably enough, Dr Shekhar Seshadri's talk earlier in the morning gave the 'ammunition' for our discussion. In the main, we talked about conflict and violence. In the addressing of conflict either at the personal, social or political level, we may reasonably surmise that conflict may survive into the distant future, but we as educators can not build our efforts on such an assumption. Several participants pointed out that conflict may well have been there since the beginning, but there is no inevitability about it. The question is: how do we explore violence and conflict in ourselves and thereby educate ourselves and our children as to resolving it as and when it arises. The question of how to understand the nature of conflict as such was raised but was not pursued.

Other areas that seemed to bother teacher participants were success, ego, identity and sensitivity. While we can not 'teach' sensitivity but only live it perhaps, the other two are even more contentious. What do we mean by 'success' and is 'identity' (and ego!) a good thing or a bad thing?

After agonizing about what exactly should we do with the children, there

was a happy summing up towards the end. Among the things that we need to do are to show them what life is, how to grapple with problems as they arise and make choices and leave it to them to face life. We cannot live their lives for them, neither should we attempt to arrange it for them nor to direct their lives. Also, children make their own emotional landscape and perhaps we as adults need to keep it authentic and not disturb it but be builders, as it were.

Day Two

Two questions that turned out to be the focus of this day's discussions were:

- How do parents come into the whole process of education? and
- What do parents want for their children?

Various questions were raised that reflected the anxiety and the agony that parents and teachers go through during the educational process, which is all the time!

Manipulation of young minds by the media and the crude commercialization of not only entertainment but even education, came in for examination. The obsession with use of electronic gadgetry, and television as sources of constant

entertainment in a kind of mindless monoculture, as it were, came in for some analysis. Two faces of parental responses were mentioned in this regard. Thoughtful parents find it hard put to restrain their children from getting into this 'pleasure dome'. Most parents indulge. While the former would need and do get support from the school to work with the children, the latter themselves need educating. (All this was suggested not with any self-righteousness, as though teachers were know-alls, but in a spirit of open exploration.)

The question of parental skills was raised. It was noted that traditionally the parents had a fairly good sense of what children need. Do adults need to be taught parental skills?

An interesting interlude related to the responses of a couple of teachers who briefly responded to the question of what their school did for them. (They had been educated in schools connected with the Krishnamurti Foundation.) Did they feel deprived of the good times that their friends were having? While some resentment may have been there at that time, they came to understand what the school was attempting. Their experience certainly made them not only ponder over such issues but even talk to the others about it when they went out.

While we do not know exactly what happens to our children after they

leave school as to their life choices, our role is to point out that problems exist and how they may be examined. This is a lesson that needs to go on while they are in school, as well as when they leave.

Day Three

The question that emerged at the beginning was: Do we see ourselves as learning beings (not only social, sexual beings, for instance)? At one level we have certainly "learnt" – we have succeeded in overcoming the low survival rates for animals over thousands of years. We have changed the natural environment to our advantage. This was questioned and debated at some length.

It was pointed out that while there has been a measure of success as stated, there also seems to be a disconnect between our achievements and our tendency to alienate ourselves from the environment and from each other— as witness the appalling wars and conflicts going on for millennia. It was suggested that our capacity for self-awareness, a quality that clearly distinguishes us from other animals – is not yet well developed.

Another strand that carried the discussion along was the question of the "wisdom" of our emotions and how they seem to determine our action, even when we seem to arrive at a 'rational' decision. Can we trust our

emotions? The danger here would be that emotions become their own justification, the rational side of our brain merely trailing the emotional side.

All that we can do is to watch these processes and allow action to take place in the light of our understanding of such processes.



Part 2

Workshops



The contents or parts thereof may be reproduced for classroom use but may not be reproduced for any other purpose without the permission of Centre For Learning or the author.

From Philosophy to Practice
Workshops conducted at the CFL conference, 2006
Educating for a Sane Society

This section of the document contains details of the more practical workshops offered in parallel sessions on three afternoons of the conference. These workshops were an attempt to demonstrate how a philosophy of education might be actualized in practice. In addition to handouts, each workshop had a strong hands-on interactive component, which we are unable to reproduce here. In spite of this, we feel that the handouts themselves are very illuminating for teachers. Except for drama, creative writing, toy-making, senior school mathematics and physical education, all the workshop material presented here was created by teachers from CFL.

This part is divided into three sections. The first contains material appropriate for all age groups of children. The second contains descriptions of activities suitable for junior age groups, and the third section is for the middle and senior age groups.

We would like to thank Jane Sahi, Vidula Mhaiskar, Stefi Barna, Vijay Padaki and Shailesh Shirali for holding workshops and helping to create material for this document.



Section One: General Workshops

Dialogue in Education

At CFL one of the most important aspects of our education is the dialogue class. Holding a dialogue class with children is a difficult skill to be conveyed in a workshop mode. There are no fixed techniques, yet there are guidelines and principles that we have come upon with years of experimentation and experience. There are absolutely no guaranteed outcomes, as it is a totally open-ended and investigative process. However, we were not deterred by these challenges, and we prepared three workshops on dialogue in education. The value of these workshops lay also in the discussions that were shared, which cannot, unfortunately, be reproduced here.

Preamble

Each one of us has a certain perception regarding a situation. Clearly, one person's perception and expression may or may not make sense to another. The attempt to communicate and understand others, setting aside our own images, ideas and preconceptions and listening without a barrier, may be termed a dialogue.

The process of dialogue is not merely an external, verbal one. A vital part of dialogue is to observe and understand our own conditioning and the workings of our own minds. Since society and the individual are reflections of each other, it is essential to begin to understand the workings of our own psyche and the patterns of our own emotions if we are to begin to explore social issues and problems. This open ended self enquiry is essential for a dialogue to have real meaning; otherwise, communication becomes simply a matter of trading opinions and ideas without moving together. In the realm of education, dialogue becomes a powerful tool at several levels.

A meaningful dialogue between individuals rests primarily on the conditions under which it takes place. The ability to listen to another person and a recognition of the rights of others to participate are important factors that can affect a dialogue. Even more important are an atmosphere of trust and a lack of fear between individuals. To be meaningful, the atmosphere must be one of critical enquiry that is at the same time non-judgemental. This necessarily also demands transparency between individuals. Structurally, it requires a non-hierarchical democratic setting that is sceptical of traditional systems of power and authority.

Such a process of enquiry and dialogue can play an immense role in a child's

life. Today's world, with its diverse and enormously powerful forces, can easily overwhelm a growing child. Only an open atmosphere based on trust can provide a setting where a young person can not only question rooted beliefs handed down through generations, but can also develop the ability to look inwards and question herself. An openness and freedom to question and express one's perceptions without fear creates room for a healthy relationship to grow between individuals regardless of age or status.

There are many challenges facing an educator who wishes to facilitate dialogue. She needs enormous patience to listen to the emerging viewpoints. She also needs a deep commitment to engage with both questions and personalities. All traditional roles, teacher/student, old/young, mature/immature, need to be abandoned if the dialogue is to proceed in an atmosphere of affection and trust. The educator must learn the art of holding her perceptions and images of young people lightly and not jumping to conclusions.

Dialogue is a difficult process and can break down for several reasons. Often our emotional responses to situations are so overwhelming that we find it impossible to communicate in a free and open manner. To be able to hold an emotional response lightly and yet engage with a question intelligently is demanding. Remaining wholly engaged with the issue at hand requires tenacity and commitment.

It is important to recognise that dialogue is not a technique to achieve a particular end. We cannot have a dialogue with a motive or with an end result in sight, whether it is correcting student behaviour or promoting a kind of moral education. Dialogue is not about transferring simple messages and codes of conduct. Rather, it holds out the possibility of a profound scepticism that encompasses all aspects of our social and personal lives and that, ultimately, questions our selfhood and private emotions in the strongest manner possible.

Dialogue with Younger Age Groups:

The child between the ages of six and ten

Dialogue with this age group can relate to various aspects of the life of the children. These can be social, interpersonal, emotional issues or even those to do with their day to day activities. When looking at dialogue with children of this age group we first need to get a sense of who and where they are and what they consider important.

Their understanding is very literal and they can relate with concrete examples and issues. Therefore one cannot speak to them in abstract terms. For example, one cannot talk about psychological hurt in general but we need to give exact and specific instances. "You have hit him. How did it make you feel? How did he

feel? How would you feel if someone hit you?”

The children are absorbed in their own world and can relate easily with their immediate world. It is important that we talk to them from where they are. For example, one cannot talk to them about responsibility unless it is at their level and by giving them examples. “Can you wash your plate well? Please make sure you come to class with your books.”

They do not see the consequence of what they are doing. They act instantly, sometimes even without thinking. For example, to use hitting as an example, children don’t realize that the other child who has been hit will be upset.

In CFL, this group of children meets for dialogues as and when issues/questions come up and are initiated by either the adult or a student. Of course, there are numerous instances of unplanned and spontaneous dialogues or one-on-one interaction to explore the nature of their behaviour and habits. For children who are a bit older, i.e. 8 -10 years of age, there is a formal weekly class set aside for the purpose of having such dialogue. Besides this scheduled time, dialogues take place over lunch, during academic class (if the need arises), or while going on a walk, etc.

Most of the time issues are communicated with them through questioning rather than telling them what to do. We feel that through the questions raised by the adult, the child will see the situation for himself. One element we must realize is that in CFL, the most number of new students are in the junior school. This poses a challenge, as trust, which is the basis of dialogue, needs to be re-established each year with the new children. It is with this relationship that the children can work as a cohesive group.

Some of the issues we have addressed are:

- cooperation among peers and others as well
- being responsible for themselves and the place they are in
- getting angry with one another and their responses
- caring

The ground for dialogue

We feel it is important for a certain atmosphere to exist for this kind of open dialogue to happen. The environment should be such that:

- there is trust between the adults and children and the children feel that they are not being judged
- there is no formal hierarchy in the adult group. The children feel encouraged to feel like equals in the realm of dialogue, so that they are open and do not feel

there is authority.

- there is interaction in formal and informal settings: in the classroom, playing games, eating a meal together, etc

Challenges we face

- Finding the balance between being a guide and a friend. We adults are constantly trying to strike this balance in our everyday structured and unstructured interactions with the children
- We adults often have an expectation for change in a short period of time, even in behavioural patterns or habitual situation. Both the children and adults need to move towards acceptance of “what is” and not push towards solutions for every situation
- We continue to try various ways to engage children who are not participative or responsive to these dialogues at either the individual or group situation
- Our close contact with parents is vital and we need to ensure that there is an ongoing communication of the school’s concerns

Points to remember:

- Be patient and listen.
- Use different tools: reading, writing their thoughts and feeling, sitting silently, etc
- Allow long silences during discussions
- Let dialogue meander, not ramble
- Be a facilitator and let children talk freely

Extract read to the children from ‘Krishnamurti for the Young’

“There were hardly any ripples on the water, there was hardly any breeze; the river was very, very still. It was really quite extraordinarily beautiful; the distant dark shore; the moon almost silver bright, polished; Venus, the morning star, still bright; and completely quiet water. And there was a fisherman, in a boat, rowing.”

Child’s comment: “I knew the fisherman was going to come and spoil everything!”

Children’s response to dialogue sessions (dialogue class)

“We can at least tell the teacher about our feelings. I like talking about good things in the morning.”

“I like talking about nice things but unfortunately sometimes we have to talk about bad things.”

“I think we have dialogue class because all the teachers can’t take it anymore.”

Talking with our Children: Middle school groups

If you're like most of us, it has been a very long time since you were 11 to 14 years old. The Middle School child's thoughts and feelings may be difficult for us to remember or imagine, but we must make every attempt to do so if we want to communicate effectively with the children.

What do you think the characteristics of the Middle School child are? Some of the more important and obvious things we have noticed over the years are listed below. You may have your own observations, specific to your time and place.

- Emerging sexuality
- Intense peer interactions
- Hero/heroine worship
- Quite judgemental about others
- Interested in the world at large

What would it mean to dialogue with these children? A great deal depends on the relationship between the teachers and students. When there is an atmosphere of trust and affection, open dialogue is the general mode of interaction in school; it pervades all activities. But there is a value, we find, in keeping time aside especially for the teacher and students to come together to talk about questions of life and living.

We meet in this semi-formal way once or twice a week. Questions or topics for discussion can be brought up by anyone, teacher and student alike. When we sit down to talk to students at this age, we follow some simple guidelines. These must, of course, be modified to suit the particular conditions in your school, but the spirit of each guideline must be held in our minds for meaningful dialogue to take place.

Creating the conditions for meaningful dialogue

Being a moderator for a dialogue class is a balancing act! You have to walk the razor's edge between several contradictory demands. It may seem impossible, but in fact when you hit that balance it can be smooth and effortless. There are always difficult moments and confusing situations, but these should never put us off our intent, which is to communicate with our children about some of the most important and serious matters in life. Here are some of our guidelines.

Ideally dialogue classes should happen with the class teacher, or someone they have a lot of contact with. This helps them open up more, and augments the teacher-student relationship outside class as well.

We sit in a circle together. We sit comfortably, but not casually. This is quite important as it brings in a necessary attitude of participation and seriousness.

For a dialogue with this age group, the adult is clearly the facilitator and often the initiator as well. You will give direction to the discussion, but not to the extent that you are constraining it. You might well ask: why give direction at all? Why not allow it to be a free flowing 'chat session'? Time can certainly be given for chatting too, but everyone feels a sense of coherence and satisfaction when the dialogue has remained focussed.

There needs to be a flow between the particular and the general. You can give space for stories and examples, which children of this age still love to relate, but by all means gently guide them back to the question at hand when they stray off on a tangent.

You must ensure participation from everyone. This does not mean you force each child to speak: silent listening has its value; but you must watch out for 'switching off'. Two simple techniques we use are to 'go around' for comments, and to keep track of those who are quiet to direct a question to them occasionally.

Long silences are not only alright, but necessary. Some children need to gather their thoughts and formulate full sentences before they are willing to utter them. Some on the other hand don't mind 'thinking aloud'.

Give enough time for each child to complete their thought. Interruptions are the bane of any dialogue, and beyond a point one cannot completely remove them! Each of us can be sensitised to the fact that the other's thought is not completed.

The language and vocabulary can be simple, at their level, and yet at times it is good to encourage them to articulate clearly, in complete sentences.

It is useful to have a topic or a question in mind so that you can initiate the dialogue, but make sure there is always an opening for a child to bring up something unexpectedly.

Avoid using the dialogue session as a 'scolding' session, or to put across a moral lesson, however subtly. When students sense this, or imagine it, they clam up immediately. One nice quality we notice about this age group is that they are quite open and non-defensive when sitting in dialogue. They invite criticism from each other in this space, perhaps because they feel it is a 'safe' place. So we must not abuse this space.

Never compare students in terms of their contributions to a dialogue, praising one or putting down another.

What do we talk about?

Suitable topics for this age group

Some questions have answers that are known – if you don't know it yourself, you can always find out by asking someone or reading the right book. For other questions, there are no authorities, no books with the correct answers. Children can be asked for examples of such questions, and they usually understand the distinction very well. We have tried using a Question Box, where children can put their written questions, and we pick one at random to discuss each time. At other times, students may come up with their questions at the beginning of class. Some examples of questions the children have asked are: *Why are some people lazy? Do we have to know a lot about animals to care about them? Why do people commit suicide? Why do people who are smaller get bullied more? And this gem: why is it when we are doing something we like doing and someone asks us to do something else which we normally like doing, but now we didn't want to stop doing the first thing, we don't do this other thing as well as we would have done it if we had just done it by itself?!*

Some topics that work well for this age group are: competition, excellence, sexuality, media, poverty, war, responsibility, helpfulness, school issues, relationships and friendship, emotions, why do we always want things to go our way, *anything* with connections to our daily life. The quotes included in this handout are from things the students of CFL wrote about their dialogue sessions.

Three important points to note are:

- We are ready to talk about anything under the sun, at their level
- We as teachers are also thinking about these topics in our own lives
- We often revisit topics

Challenges we face

Over the years we have come across challenging situations in dialogue classes. The way through these challenges will have to be worked out by the individual teacher in his or her situation, so we will just mention the challenges as questions for contemplation...

- When a child is very quiet and shy, how do we help him or her share and partake of the dialogue?
- How do we talk about 'serious' matters without making them heavy and sombre for the young child?
- There is often a big gap between what we say and how we behave! This may seem like an obvious and trivial fact, but it is actually at the heart of many things that we discuss. Children (and we adults) can become wonderfully articulate

about our feelings and tendencies, but remain nevertheless highly resistant to change.

- We often appear to our students to be contradicting our own statements. We can all come up with examples of this kind! The only thing to do is to be vulnerable – and humble. Create an environment where students and teachers can point things out to each other, so that it is not a one-sided business.

In conclusion, please do make space and time for dialogue with your students. It is vital that we keep the channels of communication open with our children at this age.

“We talk about all kinds of things, like responsibility, why we get restless, why we like to watch movies or TV so much. Friendship problems, and if we want to confess or tell out something, and we also talked about sex education a lot. We also talked about things like fear, anger and caring for the people around you.”

“For some time we spoke about competition. Whether we think it’s good to have it in school or not...We spoke about peer pressure. How it makes some people do what they are not ready to or what they don’t want to do...Excellence is also one of the topics we spoke about. We discussed why we need it and why we like to be good in what we do.”

“Why terrorists do what they do, what we feel about child labour and poverty, what we can do about people who are affected, what we would like to be when we grow up...what are some things we can do to help the environment.”

“It is nice to have a class where we can speak our mind and not be bound by the rule of the subject...the teacher becomes almost like another student.”

“We talk about feelings and there is no homework and no textbook and all of us talk about one question.”

“I wouldn’t really call it a class; it’s more like a discussion between people, in other words a very serious chat.”

“Sex and the feelings behind it was also something I enjoyed because it was exciting and other people in the class were hyped about it too. It loosens up the nervousness about talking about sex.”

“In other classes you learn how to solve ‘physical’ problems. Here we learn about ‘mental’ problems. Mental problems are often far more serious than physical problems.”

An example from one of our classes

Dialogue or discussion classes with the Palashas (twelve to thirteen year-olds) took an interesting turn recently. Our librarian told us that the 6 year-old Saralas came to her with the latest Frontline magazine, pointed to its cover and asked her, “What’s happened to this boy?” The picture shows a Lebanese boy in his mother’s arms, badly hurt and scarred. And it started off a train of questioning in our librarian’s mind: Should I leave such disturbing pictures around for little children to notice? What effect do these increasingly explicit scenes in the press have on the children?

We decided to bring our concerns to the Palashas. Their responses were truly an eye-opener for us, and deeply moving. What follows is a summary of their own thoughts and feelings on the question, which broadened considerably in discussion as you will see.

It is important for children to know what is going on in the world – even if it is bad news. That is the only way for us to be ‘in the world’. But very small children also need to believe that the world is a good place; they need to feel safe. When they are six years old, we should start letting them know about the sad or bad parts of life. We can’t start with far away events in places like Israel, but with problems in their own neighbourhood, like poor people or sick people or accidents.

Adults and older children must talk to younger ones about these things a lot, so that they don’t get the ‘wrong idea’, so that they don’t get a black-and-white idea of life. We remember (it was only a few years ago!) the day we realized that the world has problems; we remember how it felt, and how fear came into our thoughts. Is that how the Buddha felt when he first saw suffering, though at a much older age?

Pictures of suffering are important because then you realize how bad it really is – pictures prove that the suffering is real. But sometimes journalists take pictures that make you feel sick. Why do they do that – to become famous, or to sell more copies and become rich? Sometimes, but not always, we can make out when a picture was taken with a good intention or a bad one.

We asked the Palashas: Of what benefit is this knowledge of the world? Does knowing about things make us more sensitive, more compassionate? Or does it do the opposite; do we become more insensitive because of constant exposure to stories and pictures of others’ suffering?

“Yes, the way TV shows these stories is horrible. First they show scenes of war and people hurt or dead, then suddenly there is an advertisement to buy a car, then again the stories continue. It feels sick to watch in this way. How can the TV people feel anything if they can do this?”

Also, small children nowadays are playing video and computer games (and watching cartoons) that are as bad as the news. And in those games people are being killed all over the place – many times children don’t know the difference between a game or a movie and the real news! So it does make us insensitive that way. Why are parents letting their kids play these games?”

Dialogue with Young Adults

I will begin with a brief description of how we experience young adults.

Young adults from the age 16 -19 seem ideally poised for many aspects of learning. They are capable of and seem ready for abstraction. That is, they are capable of moving from a particular example to a more general principle. They are also better able to articulate many of their questions and concerns. These questions concern both what is happening in the world around them and also their own psychological and emotional landscapes.

Emotionally there is a certain maturation that seems to take place. However, they are also subject to mood swings and a fair amount of emotional churning. Often adults are not privy to this process.

Physically they are capable of many challenges and have tremendous energy. Sexuality and issues surrounding sexuality also play an important role in their lives. Again we notice that it is no longer openly visible as in the case pre-adolescent or adolescent children.

A student at this age is struggling with the whole issue of her identity and her role in the world. Issues such as: What are my interests? How will I fit into the world? What will I do in the future? What do people think of me? are of great importance. They are also beginning to deal with issues such as the individual and society and are ready to respond to the various crises facing the world: environmental, social and personal.

Peer group interaction and peer dynamics continue to dominate their lives. The opinion that matters the most in matters of self-identity, choice of clothes, world view, taste in music etc is the opinion of one’s peers. This is because they have a strong feeling that peers understand their world and what they are going through and the adults do not. Very often, since they all come from more or less the same

socio-economic and cultural backgrounds, this process only helps strengthen and sustain their world views. One of the more serious aspects of peer interaction is that it allows many young people to live in a bubble and escape from their daily life and the reality of its demands.

The media also has a tremendous hold on young adults. Often subliminally and sometimes crudely the media shapes and conditions their minds. The media often seems to convey that there is a lifestyle out there which is glamorous and exciting that we should all aspire towards achieving. The ordinary daily life that we all lead in contrast is made to appear drab and boring. The media and the peer group conspire together to sustain this world.

What we hope to achieve in a dialogue with young adults

I would like to begin by stating that this is not a group therapy or individual therapy session, nor is it a place for moralising or a 'moral science' class. Further, we are not looking to solve any particular problem and reach a conclusion.

Dialogue sessions are times when we together think and share our thoughts about various aspects of life. We very often question these things, such as images of people, situations and even our own identity, all of which seem very real to us. We most often let our emotions, thoughts, opinions and ideas overwhelm us. We take all these feelings for granted and let them pass away saying, "It is only natural." Questioning them is very often painful, so these views we hold so close remain unquestioned. Dialogue sessions are times when we question these feelings; not specific incidents but from a more general perspective. The discussions give rise to new questions, which we think about through the week.

Our primary intention is to create a space where there is open and free communication between children and adults, a space that is safe for children and adults to share their thoughts, feelings and opinions free of fear and judgement.

In the dialogue sessions we hope to help young adults to gain a certain perspective on many of the issues and difficulties they are going through. We would like to help them have a certain detachment from the issue at hand and a capacity to look at it from various points of view.

The dialogue session is space for self-learning and enquiry. We hope that in the process of dialogue there is sharing of meaning and understanding and perhaps even an insight into the nature of our psychological being. We hope this process helps dissolve emotional knots and conflicts that we humans seem constantly getting into. We would like young adults to realise that each one of us has an inner world which consists of emotions, thoughts and feelings, and that society and the world out there mirrors this inner world.

The right environment for dialogue to take place

What is the right environment for dialogue to take place?

First and foremost we need to establish a relationship of trust between the adults and the young adults participating in the dialogue. We would like to emphasise that for us, having meaningful dialogues with young people is an integral part of our education and is extremely important for us. Children begin these dialogue sessions at CFL when they are in Middle School. These dialogues occur not only during the formal dialogue session, but also in many informal settings.

A stable peer group helps the dialogue sessions flow smoothly. When each participant is not worried about what the other person is thinking about them and whether what they say will be held and used against them, there can be a genuine sense of enquiry.

It is very important that the adults who play the role of the facilitators do not come in with their own agenda. This is not a space to foist one's ideology or dogma. This requires that adults are open to being questioned, in fact constantly invite questions. The adults need to start from where the participants are, and not from a preconceived notion of where they are or where they should be. The adult should be capable of listening and allow for long pauses before young people feel free to come in and speak. They should be careful not to dominate the session, talking to each other rather than with the participants.

"I have enjoyed talking about things like—what is the self, when do we get hurt and so on. These are mostly the ups and downs in my life, and so I feel very connected to them. Why do we get hurt? Something like this is so basic; everyone gets hurt. However, when we started looking at why it happens, and when it happens, I realised how baffling the whole thing actually was!"

Difficulties and challenges in creating a dialogue session

As we have mentioned before, creating an environment with free and open communication between adults and children is extremely important for us. However, this is by no means an easy task. In particular dialogue sessions often face many challenges. We discuss a few.

- On a given day the topic being discussed may just not take off. Participants may feel that the topic is not relevant to their life and switch off
- One or two participants may be simply not in the mood and this can affect the whole session

- Some of the discussions may be too close to the hearts of participants and they may be unable to be vulnerable and open
- Dialogue sessions can often be punctuated with long silence and the facilitators must not feel anxious to try and fill this space
- Young adults may feel that they have to come up with a profound or complete answer and may feel shy or reluctant to share their not yet fully thought out ideas
- If an adult is too quick to intervene or correct a particular opinion that a student has, then they may hesitate to open up the next time
- Some young adults may feel suspicious of the process of discussing these issues and may feel that it is pointless talking about them
- Dialogue sessions can often unleash strong emotions such as fear, anger and frustration

“I don’t feel it is easy to participate in dialogue sessions. A lot of effort has to be put into actually thinking about the problem at hand... Some people are shy and prefer not to speak out, and some people would rather switch off and think about something that does not require effort.”

Conclusion

We have shared with you some of our observations and learning over the years about dialogue sessions. It is perhaps obvious by now that there is no blueprint to engage in this process. By its very definition, each session is unique and unpredictable. This fact offers the participants tremendous possibilities to experiment with dialogue in their own environments.

Art in CFL

Radhika Neelakantan

It is not the language of painters but the language of nature which one should listen to, the feeling for the things themselves, for reality, is more important than the feeling for pictures. –**Vincent Van Gogh**

Importance of art in a child's education

It is fun. It lends a natural sensitivity towards aesthetic sensibility. It allows the child to play with line, form and colour. Unlike abstract activities, it provides immediate gratification and is immediately meaningful to a child. It nurtures the exploratory and creative experience through handling material. It allows the child to relate to the world around. It is an opportunity that nurtures the child's ability to engage creatively in the present.

Art is a way of depicting what one sees of the universe in different ways. It is amazing that you can make completely realistic or totally symbolic art and it tells something in a new light. Sometimes art helps you to look at things in a way you have never looked at before.

The place of art is to look at or see the world around us.

Art is an important mode of expression. The artist may not consciously be trying to express herself, but it is an act of expression all the same. It seems to be, like music, 'non linear'. Hence, it is an important area for exploration. Of course there is the possibility of encountering (and expressing) at many levels - at the 'simple' level of colour, form and technique, as well as multiple levels of meaning.

Place of art in the CFL curriculum

Opportunities are provided for students to explore art. There is the space for those for whom it may become a passion.

Is it possible to work with attention? Is it possible to look carefully and seriously at what one is doing? Is it possible to begin, go through a process and end it with energy? This is the approach and there is interest in seeing what happens with children of all ages. In order to observe and understand what is happening with the child, it is important to relate to and be alert to the child and the situation. In the case of art especially, it is important that the adult is more of an observer and intervenes only when absolutely necessary.

The group of teachers working at CFL have a healthy attitude towards art. This is important. If as a group it is possible to discuss issues openly, then a more wholesome curriculum may result.

Approach to designing the art curriculum in CFL and some questions

When I began to do art with children in CFL, I began with activities, activities that were fun and those that interested the children during the art class. Slowly over the years, it has become important to see if the child can learn to observe lines, forms, shapes and colour in the environment. Looking and drawing has become a very important part of the curriculum. The final artwork is unique and beautiful in its own way when there is observation.

Is it possible for the child to be alert to what is going on within and outside and the relationship between the two? Can the child experience the joy of working seriously and explore the nuances that this area provides at his or her own level? Is it possible to be non-judgmental and non-restrictive? Or can there be tentativeness to judgment?

Group feedback occurs more or less once a week. At the end of a session, all the artwork is put out on the floor and the whole group walks around commenting on their own as well as others' work. It is a serious activity and a whole lot of listening happens at this time. Most children are careful about what they say but are truthful. Also, this is a time for a lot of learning from each other.

Relationship to art

Interest in art has provided enough material to go on. Ideas appear as each activity is done and these are improved upon over time. There is therefore a flexible curriculum or method. It is the active involvement with children that allows for ideas to spring forth.

The activities are simple in themselves. It is important to introduce the activity to the group at the right time. Art is not restricted to any particular medium or form. It is really a very broad structure that we work with.

Art curriculum

Discussions with children play an important part in forming the art curriculum in CFL. Exploration of different activities allows for exposure to the various possibilities for the child and the adult.

The same exercises can be done with different age groups. The instructions may be the same but how different children in different age groups perceive and work is vastly different. From this, ideas are born for the next class.

Junior school (6-10yrs)

At this age, children, left to themselves, are usually happy to draw for long periods of time without being aware of time and what is going on around them.

Free drawing is something that is encouraged. This is not part of an “art” class but would be across the timetable. Flat, bold and direct representations are common, slowly moving on to more sophisticated details. Looking and drawing begins when they go out of the classroom and draw things they have observed in their nature journals.

Middle school (11-14yrs)

Art classes are done formally in the art room. This is an exciting transition for the child and they are open to suggestions. It is at this time that art room “etiquette” is taught and emphasized upon each time the art class begins. It is an important activity and time spent on this is well spent. The maintenance of the art room and art materials needs constant discussions.

Soon, it is quite clear that some of the children have learnt the do’s and don’ts and some haven’t. Some never will! The understanding of the concept of responsibility is important. Sometimes everything is laid out for a class and sometimes they are expected to take what they require, use and then put back neatly what they use. Time needs to be managed for them at this stage and given sufficient time, cleaning up is done well.

Through this age, they begin to expect more of themselves as artists. Quick work is done and if they are dissatisfied, there is a loss of interest in their work. Artwork seen elsewhere is copied and there seems to be a loss of “faith” in themselves. Sometimes there is a tendency to draw things as they know them rather than how they see them. There is however a willingness to share and interact with their peers. This can be used to advantage. Group activities can be done, and through this, organizational and creative atmospheres are created. For example, in the making of a collage, discussions often take the group through situations of understanding and conflict.

Some exposure to other artists’ works in the form of readings from the open library and looking at works of artists who happen to visit the school or are at school is done. Art is also done when other subjects or projects are done.

Children are ready to improve their technical skills and have more control over the media. There is a readiness to rework problem areas and a greater awareness of detail, as they grow older.

Senior school (14-18yrs)

Coming to the senior school allows students to choose the activity they will work on for the term. This allows them to work on something they would really like to explore. So, at this stage, there is a seriousness to work at something in a

sustained manner. Here, students are able to work for longer times on their own and are ready to look at their work more critically.

More serious reading is suggested regarding art and emphasis is given to preparatory work.

Role of parents

Parents can play an important role in the child's development. At an early age, children should be provided with sufficient material to explore the possibilities. It is important that children are not taught to draw something in a particular way. Also art need not be offered as an activity if there is nothing else to do or if the child is 'bored'. That is another whole long discussion!

Some of the challenges

As adults, each of us has our own ideas about how things are taught. Is it possible to hold these ideas lightly and look at things afresh? Is it possible also to see how traditional art evolved and not reject those ideas all together? Apart from that, art teachers, like all other teachers, feel that sufficient time is not give to their subject. Is it possible to work out allocation of time and give at least three hours a week to art? This would be satisfactory for the child to get a feel of the subject and to begin to bloom!

Some art activities and projects done over the years

1. 10 min sketch: On entering the art room, a 10 min sketch is done. Any natural or man-made object is chosen by the child or if asked, by the adult. Use a 5B or 6B pencil, a 4"x 6" sheet of paper. It is important to stress that drawings be made to fit the whole sheet of paper and if necessary to exceed the paper! Older students who are seriously pursuing art may be asked to do a ten-minute sketch everyday.

2. Portraits: This is an activity that may extend over some weeks.

Day 1: Each child is asked to choose a partner (much debate can ensue and therefore, it may be better for half of them to pick the names of the other half!) and is asked to draw the head and neck of the person they know so well without looking at them. They work slowly and carefully, trying to remember whatever details they can.

Day 2: This time they sit in front of their partners and draw, looking at their partner. (Students are encouraged to take their time and not rush to finish. If there is time, they exchange roles and the artist becomes the model. Otherwise it can be done the next day.) This activity can be done first without looking at the paper and then looking at the paper. A4 size paper is used. The drawing covers the sheet.

Day 3: The teacher demonstrates how it could be done. Looking at a subject, with all the children watching, the teacher sketches with commentaries on what to look at and how to keep the line tentative. They are asked to look at the lines and the difference in the brightness. Emphasis should be made to keep in mind that they must draw as they see and not as they know something to be.

Day 4: The students work on their own. They go back to their partner and repeat the exercise.

Day 5 onwards: People from the school or outside are asked to sit for the group.

No time period is set in which students have to complete a portrait. It is limited by how long the partner has the patience to sit!

3. Collage: It can take off from where the portrait ended or a new drawing can be made. Sketches from nature make excellent material for this activity. A small part of this can be enlarged and two or three children can work on a collage.

A 'paint box' with pieces of paper in various colours is made. Fevicol mixed with water (1:1) is then spread on the section of the drawing that needs to be of that colour and the pieces of paper are stuck onto the drawing. As this activity extends over some days, children put away the pieces of paper they have torn into paper envelopes, to be used again. Some of them would have gone to great trouble to get the exact colours they need!

4. Individual ideas: After a few weeks of ordered activities, it is a pleasant exercise for the students to do anything that they would like to do. The teacher can make suggestions if the student asks for some. We used chart paper of good quality and a size slightly larger than A2 for painting. Sometimes this work has also extended over a few weeks.

5. Mural of the flora around the campus: This is a project that extended over a few months.

a. Students were asked to go out and sketch from nature. (If such environments are not accessible, they can draw potted plants.) A4 size sheets were used at this stage.

b. Little windows of size 4cm x 6cm were cut into cardboard. These windows were then moved over the sketches that had been done to identify the part they would like to enlarge. The window was drawn on the sketch and a 4cm x 6cm grid was drawn very lightly (each line 1cm from the other) on the sketch after colouring the window.

c. Whatever was in the window was enlarged using a grid. This grid was drawn very lightly on an A2 size paper. 4 x 6 lines. These lines were rubbed off

later after the picture had been enlarged. These pictures were then painted using poster colours.

d. A template of the wall taking into consideration the windows and doors was made. One inch on the wall was represented by 1cm on the chart paper. Each child in consultation with the teacher then drew the chosen drawing on the template. To do this in consultation with the teacher is important, as the teacher would find it easier to have an overall idea about things to take shape; the bigger picture!

e. From the template, the drawing was enlarged onto the wall using a pencil. Each student did this. The proportions are important and need to be kept in mind here.

f. The painting then began. Acrylic paint was used. Students made a list of the colours they were likely to need and then a comprehensive list of colours was made. (It is important to talk to the students about the effect of gravity on paint-loaded brushes when vertical walls are touched.) Water was mixed with the acrylic paint when necessary. For palettes and water containers we asked students to bring plastic containers and lids that they wanted to discard. Ladders would be a requirement.



Craft: The Art of Working with Materials

Lalitha Manjunath

Introduction

This document is an attempt to share my experience and expertise with all those people who are interested, curious and enjoy working with their hands. This engagement has largely happened in the sharing with many groups of children.

An effort in documenting these activities has been done in the following pages. It is also to assure all those people who are enthused, to take on their passion without feeling the lack a professional background.

Apart from a four month intense course in clay work, all my learning and growth has happened on my own and in innumerable sessions with children. Much of the work documented here has to do with clay.

Intention

Children have a strong urge to work with their hands. At Centre for Learning, it is our intention to nurture this innate quality of the child.

The teacher here has an important role in motivating the student with respect to their being open and flexible. The teacher begins by looking at the child's capability and perception.

Through the years the students are exposed and encouraged to work with different materials. One of the conditions of achieving the full potential of every child is through a sustained programme of engagement with materials and equipment. Children create and design tangible objects using materials like

fabric, thread, clay, paper, bamboo, coconut shell, beads etc. This has helped them to learn the nature and beauty as well as the limitations of each of these.

The most difficult task of education is to keep this perception open and to help children develop both sensitivity and selectivity.

Children tend to replicate what they consider as a "perfect craft piece", without experiencing the process involved in making something. The craft curriculum in CFL emphasizes the importance of the process involved rather than arriving at the end result.

Process

As the children to make craft items, which have an ornamental or utility value, they also learn to bring aesthetics and quality to their work.

The process of understanding any material is an interesting aspect in itself. One

learns this by being willing to try (making mistakes along the way!) and by being patient.

The teacher offers suggestions and stimulates and motivates the child to seek new solutions. As the child works over the years, a certain growth and expertise in their quality of work becomes evident.

It has been recognized that teamwork in creating an art piece is an important aspect in learning, apart from individual engagement. Qualities such as co-operating, brainstorming together, helping one another and assessing work are woven together when activities are planned with a group of 10 to 15 students.

Pure joy is the children's joy. They have the power of using any and every trivial thing to create their world of interest and the ugliest doll is made beautiful with their imagination and lives. **Rabindranath Tagore**

Structure

- The curriculum begins when the child joins the primary section at the age of six
- This exploration goes on up to the age of fourteen years. This is spread over two block periods of an hour and a half each in a week.
- In the senior school, students above the age of fifteen choose any one activity in which they work, to a large degree, independently
- Every class begins with a meeting to discuss and organize the time and tasks involved
- The approach to an idea or a design and the visualization of details is given importance, rather than immediately getting into skills and techniques
- Extension projects are given when the students are around twelve years old
- Students are made aware of the care and maintenance of tools and of the importance of cleaning the work area after their work is completed
- The craft lab is open throughout the day to encourage easy access for adults and students

Clay work

Level 6 to 8 years

First four to six weeks: Activities/Assignments

1. Familiarity with the lab and the equipment for every new group which begins to work
2. A few sessions of free, open ended work with minimal adult intervention
3. Sharing of ideas among the students to motivate each other
4. Preparation of clay to know the whole process
5. Introduction of techniques using their ideas
6. Teaching the techniques of joining surfaces
7. Use of tools for functional and decorative purposes

Discussion points

1. What is clay, its origin?
2. Where does it come from?
3. Properties of clay
4. Demonstration of the firing process
5. Why does one fire clay objects?
6. Difference between a raw and a fired clay object with respect to colour, texture, strength and usability
7. Why does fired clay sometimes become damaged and cracked?

After 8 weeks: Activities/Assignments

1. Introduce forms with themes such as animals, plants, vehicles; imaginary, human and inanimate forms
2. Introduce the three basic techniques in clay work – pinching, coiling and slab work
3. Encourage children to make objects using any of these techniques
4. Enlarge an idea using a technique. Using slabs one can make tiles, boxes, mirror frames, trays, sculptures, pen holders, name and number plate etc.
5. Explore activities such as mixing different clays, clay with sand, clay with ash, clay with sawdust, clay with paper etc.
6. Use occasions like *Ganesh Chaturthi*, *Dusseera*, *Diwali* to create forms like *Ganesha* dolls, *diyas* etc.

Discussion points

1. Testing if a piece remains intact after drying.
2. How to repair damage?
3. Re-do something which has failed
4. Share any discoveries found by anybody
5. What do textures mean and how does one get those effects on clay?

Level 8 to 11 years: Activities/Assignments

1. Use of techniques of coiling, pinching, and slab making for creating objects

Ideas / Themes

Useful items around the house

1. Pens, spoon holders
2. Mirror frames
3. Key holders
4. Letter holders
5. Boxes, with or without lids

Ornamental / decorative purpose

1. Suspending / hanging mobiles
2. Beads and jewellery
3. Wall hangers
4. Tiles for sticking on the walls
5. Masks

Sculpture

1. Humans – only head with the details
2. Plants, animals and vehicles, using the same idea as above

Discussion points

1. Polishing on surfaces; differences
2. Using different techniques to polish
3. Elaboration on a theme to visualize possibilities
4. Why does one wedge clay? Reasons and uses
5. To be critical about one's work and learn from mistakes; to repeat or redo an idea.

Level 12 to 15 years: Activities/Assignments

1. Introduce techniques of wheel work
 - (i) To center and make a cylinder with the clay
 - (ii) Start with forms like :
 - Paper weight
 - Candle Holders
 - (iii) Next move to forms like
 - Holders
 - Mugs, cups
 - Pots
 - Attachments like handle, spout, lid etc.
2. Sculpture—an enlarged version using coil or slab techniques
3. Huge multi-pieced masks
4. Big hand-built pots
5. Combine two or three materials to design a piece. For example: a clay pot with coconut shell lid.
6. Wall murals, tiling and mosaic work
7. Basic glazing around the age of 15 years

Discussion points

1. Precision in the work
2. Quality and aesthetics to be discussed and woven into the design
3. Big design project should proceed only after discussing, drawing and then detailing the clay work.
4. Arriving at different shades while firing
5. Details of firing process
6. Discuss what glazing means and learn the basic chemistry behind it
7. Rectify mistakes and learn to redo work.

Basic requirements

1. Raw dry clay from the local lakes or from local potters
2. Big tubs or cement tanks for soaking and storing the clay
3. Framed mesh/sieve with different grades
4. Rolling pins, flat sticks, wooden planks or boards
5. Small cups/bowls, sponge, gunny sack

6. Shelf or a rack for storing the finished work
7. Plaster bats for hardening the slurry
8. Odd bits of tools made from broken things: empty pen refill, tooth brush, pen cap, tongue cleaner etc.
9. Sharpened hack-saw blades
10. Low cost tyre wheel and decorating wheel
11. Plastic covers for storing clay

Firing red / terra cotta clay

- Finished clay objects, once dry after a week or 10 days, are ready for firing
- The kiln could be built with country bricks and plastered with mud
- The square, rectangular or circular kiln has a wall a foot above the ground
- This has an opening for feeding the fire
- Above this wall, steel rods need to be placed to make a grater
- After keeping the rods, one continues to extend the wall keeping a certain height required for the load of clay objects
- Before firing, the grater has to be roughly covered with broken clay pots or shards. This helps in keeping the clay objects on the grater. Also it allows the heat to pass through the shards before it reaches the raw clay objects
- Bigger sized objects have to be placed first
- Wheel forms also could be placed close to the fire
- After loading the kiln, the mouth is covered with clay tiles and with a thick layer of grass to cover the gaps. Space in the center is to be provided for the smoke to pass through
- The gaps have to be plastered with mud

Firing time

- The first two hours of firing is very slow and outside the mouth of the kiln
- This is very crucial as otherwise the pots might be damaged
- After two hours the logs are gradually inched forward. Allow 15 minutes before pushing the fire each time into the kiln
- Between the third and the fourth hour, the fire could be close to the centre of the kiln
- After the fourth hour, firing can be rapid and continuous
- By the end of the fifth hour, the fire would have reached the top, giving a

delightful red glow, a feast for the potters, during each firing

- The mouth of kiln has to be covered with bricks at the end of the firing
- Twenty hours gap has to be given before the kiln is opened

Black / smoke firing

A potter can get a rich, permanent, natural, black glaze on the pots by following this method:

- The pieces have to be put into a large pot
- Fill the pot with sawdust, cow dung or dry leaves
- Cover the mouth of the pot with grass. Seal the grass with mud or clay
- Place this pot in the kiln with the other clay objects
- One could even get a whole batch of clay objects black, by covering the chimney. At the end of the usual firing, one needs to stuff the fire mouth and fire chamber completely with grass. After doing this for about 15 minutes, the mouth of the fire chamber has to be sealed. This makes all the objects in the kiln acquire a permanent black glaze.

Contacts for workshops and consultations

1. Raw clay – Local potter, ceramic manufactures and Pottery Town for prepared clay (only in Bangalore).
2. Regional Technical, Training and Development Centre Victoria Road, (Next to Life Style) Bangalore. Ph: 25554969 (Off.) Contact: Mr. Ullaskar De (Pottery Department) and Mr. Jayaram This center offers training and work shops in building kilns.
3. Mr. Sanjay Manchekar – Expert Studio Potter in Kilns and glazes Ph : 09322332228 (Mobile)
4. This contact is for holding workshops in art and craft and for expert consultation. Ms Vishakha Chanchani, Good Earth, Uttarahalli Road, Kengeri, Bangalore – 560 060.
5. Lalita Manjunath, 16 Good Earth, Uttarahalli Road, Kengeri, Bangalore – 560 060, E-mail : lalita.manjunath@gmail.com

Contact for students to do pottery as a career

1. Gramadoya Sangh
P.O. Bhadrawati
Dist. Chandrapur – 442 902
State – Maharashtra
(A social work organization to promote rural pottery and potters)
2. The Andretta Pottery and Craft Society
V.P.O. Andretta
Dist. Kangra – 176 103
Himachal Pradesh
E-mail : minimarv_99@yahoo.co.uk
www.andrettapottery.com

The Mosaic Activity (A group/team work)

This is an interesting activity appropriate for a group. This activity is suitable for children above the age of twelve years. The activity facilitates group decision-making, co-operation and a critical appreciation of each others' quality of work. It was done with a group of fifteen students for three hours a week. Some students finished in eight weeks and some went on for ten weeks.

This is how the whole activity was envisaged:

1. The group assembled in front of the wall on which the mosaic work had to be done.
2. The actual size with some dimensions was finalized by the group
3. The place/area for each person was marked with a wet chalk and scale. They decided that the height and length would be 42cm and the width would be 37 cm
4. Some deliberation happened to decide on the theme to bring in some connectedness. The idea for the design was 'patterns from nature'
5. Two sessions went into drawing and arriving at the final draft on paper using the actual dimensions on the wall
6. The children tried painting, using water colours, which were to be used finally with the tiles
7. The drawing was transferred on to the wall with a wet chalk
8. After breaking the tiles maintaining a certain size, the sticking with tile cement/

adhesive started

9. Each time, the wall had to be wetted before sticking the pieces

10. After sticking all the pieces, grouting between the tiles had to be done to cover the gaps

The whole activity had very little guidance from the teacher. The group gave feedback to each other. They also organized the materials needed for the work.

It was a pleasure to see the designs unfold on the wall.

The teacher obtained the glazed tiles, cement and grouting material from the ceramic and hardware dealers.

Bamboo

Children around the age of nine or ten begin to become more confident about using different materials, equipments and tools. Quite often, boys tend to enjoy using tools like a hammer, knife and hacksaw. This is the stage when activities like carpentry and bamboo work should be introduced.

Bamboo has enormous possibilities. As a material it has great aesthetic quality and it is fairly easy to understand its nature. Right from traditional basket weaving which is quite complex (though it looks simple) to making a pendent or a key chain, one can bring in a great deal of craftsmanship.

Basic exercises

Learn to use the knife and hammer

Split the bamboo into flat and round strips

Sandpaper finely to see the grain of the bamboo clearly

Make designs with the hot rod/poker.

After doing these things with the bamboo, one can make:

1. hanging decorative mobiles.
2. Mikado sticks
3. chopsticks
4. pendants
5. key chains, book marks
6. earrings
7. bangles
8. toys

After a few weeks of working, students become fairly confident with the material. At this stage one could encourage them to come up with their own ideas and designs.

Extension exercises

1. holders for stationery items keys and knives
2. mirror frames
3. delicate toys
4. weaving Baskets

One could even invite a traditional basket weaver for a workshop.

Equipment

Good bamboo from the wholesale market
Knives with strong handles
Iron Poker
Stove
Hammer, nails, hooks
Hacksaw, spare blades
Sandpaper of two-three grades
Hand drill and drill bits

Reference

Bamboo and Cane Craft of North-East India, by Rajan M.D., Nilam Iyer and Gnanashyam Pandya
Published by National Institute of Design

Contact for workshops:

C.D. Sunish
URAOU
Thrikkaipetta P.O., Wayanad District
Kerala State
E-mail : uravu2001@yahoo.com
Phone : 914936231400 / 326896

Creation is one of the most difficult things to understand. The man who writes a poem, however beautiful, thinks he is a creative being. The man and the women who breed children think that they are creative. The man or the cook who makes bread thinks, perhaps, he is also creative. But creation is something far more. That man is not creative, who merely writes a book or fulfils himself in some petty little ambition. Creation is not a man-made structure, or man-made technological knowledge and the result of technological knowledge which is merely invention. Creation is something that is timeless, that has no tomorrow and yesterday; it is: living timelessly. And you come to it very naturally if you understand this whole problem of existence.

I do not know if you have every noticed how a drum is always empty. When you strike on it, it gives the right tone; but it is empty. Our minds are never empty; they are always full. Therefore, our action is always from this dreadful noise of thought, of memory, of despair; and therefore action is always contradictory, leading to great misery.

But a mind that is completely empty, empty in the sense of observation, silence and therefore, love and the whole understanding of death—such a mind is creative. And a creative mind is empty all the time; it acts from that emptiness, it speaks from that emptiness. And, therefore, it will always be true, it will never bring about a deception within itself. And it is only such a religious mind that can solve the problems of misery in this world.

**Extracted from J Krishnamurti
Madras 7th Public Talk 6th January 1965**

Role of the Body in Learning

Stefi Barna

The goal of this workshop is to experiment with what kinds of things can be learned using some capacities of our bodies and senses. The workshop consists of a series of experiences to cultivate our 'physical intelligences'. Some of them may be of use with students, or simply meaningful for you and of no use in the classroom whatsoever!

What do we mean by the 'body'? Body and mind are not really separate. But since schooling prioritises ideas/thinking over all other kinds of learning, and schooling ignores (is uncomfortable with) the physical body and the senses, we will focus today on physical side of the mind/body unit. How is the body 'of use' in education? It is the vehicle for learning, awakens dormant faculties, keeps the brain elastic. Newness is important, not mastery. After using the body you are in a different state of mind, have a more perceptive inner environment

Society creates the bodies it needs. Schools are intellectual enterprises, dominated by technology and thinking to the exclusion of everything else. Children become alienated from the body/senses and lose the ability to perceive their relatedness to the world around us. The body is the instrument through which we experience the world.

Urban school children in general are characterised by:

- Low levels of fitness (flexibility, stamina, strength)
- Relatively low energy through the day
- Emphasis on appearance versus ability
- Increasing obesity
- Urban orientation to life
- Generally 'dis-embodied' experiences

What is wrong with PT as it is practised currently?

1. In our sedentary lives, a special time is set aside to move, rather than daily movement being a part of life. This is called Physical Education. PE/PT, like academics, focuses on a narrow range of abilities, i.e., the skills for competitive team sports. These are standardised internationally and discourage less-skilled students.

2. PE/PT does not prepare young people for a physically active and alive adulthood.

3. In schools, physical learning competes with academic learning for time.

4. Teachers rely on communication about exercise as a value (“it’s good to be fit”) rather than as role modelling it as a way of life. We tend to take a moralistic approach rather than sharing our own authentic joy and pleasure about it (mostly because we have lost it ourselves!). Adults avoid taking activity when they are tired or feel self-conscious, which sends the message that movement requires optimal conditions of energy/interest. Yet movement can take place in any kind of mood, not only in opposition to couch-potato-hood.

What is Physical Activity good for?

- Affords general fitness for an otherwise sedentary life
- To prepare the body so that the mind can study
- To develop different ways of physical ‘intelligence’

Body Awareness Exercise

- sit straight, comfortable, relaxed, centre your weight, close your eyes when you can
- notice how you are feeling: tired, full, heavy, agitated, anxious, preoccupied
- don’t try to change anything, just make note of it
- notice tensions or discomforts in different parts of your body
- check all parts of your human frame: feet/hands, face, neck, back of head
- notice where you feel ease or comfort
- watch the depth of your breath, take a deep breath to compare: ribs, chest, belly
- watch the pace of your breath
- find the beating of your heart – watch it, is it fast or slow, solid or butterfly?
- where do feel your pulse, only heart or also elsewhere?
- can you observe both your heart and the full process of breathing? Keep track of both
- notice any sounds in the room
- notice the sounds outside the room
- can you listen to the sounds in and outside the room and also feel your heart and breath?
- now notice your state of mind and how your body feels. Is it the same as when started?
- when you are ready slightly open your eyes, keep them downward looking
- notice the effect of visual stimulus
- whatever you are feeling, whether you are relaxed or uncomfortable or alert

or half-asleep, let the mood or mental state linger on as you go into the next activity. Don't push yourself back into a verbal/visual mode, just come along and bring your current state of mind with you.

Listen to these instructions before you move. Stand up very slowly, with as much economy of movement as you can, be as efficient as you can, and pay attention to each part of the movement of standing up. Don't use your weight to throw you from one position to the next, just watch the use of muscles and joints and where weight is placed.

Drama

Vijay Padaki

The drama workshop at the conference drew the group into the theme through an unusual and insightful approach: the place of co-operation in theatre activities. Participants were required to adopt interesting strategies in completing their exercises and activities. There was also a component on movement in theatre as well as a general discussion on the place of theatre in education. We regret that we are unable to document this insightful workshop for the purpose of this book.



The Open Library

Usha Mukunda and Sunila Rau

(The following is an extract from a larger document detailing the experience of the Open Library at CFL. The document is being prepared for publication in the near future. Interested individuals can write to info@cfl.in with 'open library' in the subject box).

Introduction

At Centre for Learning, we have an open library both in concept and reality. This means that there is free and open access to all material and resources, at all times of day and night, and throughout the year. Mutual trust and shared responsibility provide the ground from which this library functions. The rules and conventions of library interaction evolve out of a sense of co-operation, consideration and care for the community as a whole.

The challenge for the librarian is not one of policing and monitoring, but of perceiving and holding the library and its users as a vibrant functioning whole. This can only be done when the community of users feels a sense of ownership and accountability. For example, on an afternoon when there is a sudden deluge of rain, a couple of students dash to the library to shut windows and move books out of reach of the rain. At night, the place is locked by individual senior students on a rota basis. If one of them is unwell or away, another student takes on that job. Much of this happens without the intervention or knowledge of the librarian.

The collection in this library reflects the commitment to quality and excellence. Classics, both traditional and contemporary, can be found on the shelves. Staff and students are actively involved in the selection process. In fact, students are taken regularly to book stores and book exhibitions to select and buy books for the library. An innovative in-house computer program ensures that all users can borrow, return, search for, reserve and conduct other library operations with ease. The facility of borrowing has been extended to former students, parents and guests.

The main library is located in a beautiful building which was designed with ideas from staff, students and, of course, the architects. Its ambience and aesthetics welcomes and invites all users and visitors. Every student group has a weekly library period which is used for browsing, borrowing, returning and also for various activities to enhance reading and awareness of the library. Helping the library in various ways is an inherent culture of the place. Books in need of repair are restored imaginatively and lovingly by students.

Students also do projects to facilitate use of the library such as creating

bibliographies, making indexes and labels for shelves, posters and book marks, putting together a short video on the library and a brief computer guide for newcomers.

The open library at CFL is a happy and lively place.

The spirit of the open library

How does it come alive in every facet of the school library??

Let's find out! Remember that the openness of the library cannot happen if you are a speed fiend! Space and leisure are essential to the spirit and fulfillment of an open library.

1. Location: Even if you are already in a fixed location, read on for future reference.

The library needs to be in a central place, open and easily accessible to all users. Should it be close to the classrooms? Ask teachers and students what they feel. Not near the kitchen, the street or even the playgrounds for fear of noise, pollution, heat and smoke. Upstairs, downstairs or in the principal's chamber? Again, users' feedback will be valuable.

2. Physical Appearance: Inviting, welcoming, bright, colourful. Remember, this is a library being used mainly by young people. In fact, they can help bring in each of these aspects.

A wide entrance so your users don't feel cramped as they enter. Even if your area is small, try to provide different spaces for different activities. Have furniture or not(!) in tune with the area. For example, relaxing seats and cushions for the informal reading area, table and chairs for reference area, mats for story time and other group activities, little nooks and corners for individual readers, low chairs near shelves for browsing, stone benches for outside reading, a pick-a-book box for anyone to read in the library and so on.

Children will happily make posters listing various aspects of the library. They share their writings, sketches, projects, craft work, flower arrangements and calendars through displays. Notice boards are also not the librarian's prerogative but a joint responsibility. So teachers and students bring in interesting clippings, announcements of exhibitions, pictures and photographs, jokes and cartoons for the librarian to arrange on the notice board. Younger children appreciate it if their material is at their eye level.

There are also 'talking points' A peace flag from Italy, some stones from Lothal, a scrap book of a Mela, assorted things made by Arvind Gupta when he visited.... Each of these has some significance for the children and they can talk

about it to visitors or new entrants.

3. Selection and Collection: It is best that the librarian is on the selection committee, if she is not there already! This is obviously because she is the one who knows the collection, the users and their profiles.

Decide on a budget looking at previous years' patterns, present needs and future growth. Keep abreast of new material by reading reviews in newspapers and journals and put them up so users also learn to make intelligent suggestions.

Visit bookstores on a regular basis. Visit other libraries when possible, for other ideas. Make sure you have material in more than one language. Also try to have some books in Braille. How about some archival material? Try to acquire some. Keep audio and video tapes, CDs and DVDs as well as CDROMs. This way you will be making your users aware of different methods of accessing information.

Now here is where your users actively enter the scene. Invite suggestions from them by having a box, or by having a wish-list notebook prominently in view. Look at it frequently and give your users some feedback. Take groups of students to bookstores and book fairs for selection and purchase. (See further sections for more details.)

4. Organisation and Access: This is where the proof of the pudding comes in! Is the library locked when the librarian is not there? Even if this sounds revolutionary, just let it vibrate in your ears....how about keeping the place open with senior students in charge of locking and unlocking each day?!! You CAN do this when the basic philosophy of the school is one of freedom with responsibility. The library is then in harmony with the school's intentions. Clear conventions based on co-operation, convenience and common-sense appeal to children and they do adhere to them. For example, NOTHING leaves the library without a record of its leaving! If books are missing or lost, there is a notebook for users to fill in the details. This makes the loss a very factual occurrence with no overtones of theft and suspicion attached. Others also enter the picture to remind and search for the books. For me, a book is never lost. It surfaces after three months, sometimes even six months. There are no fines for late return, so frequent reminders are made, generally and individually. By and large, forgetfulness is not a major issue. As the librarian, you must also remember to be talking and relating to your users in various ways which is the basis of all that we do at CFL.

Are your bookshelves unlocked and easily accessible? I hope you do not have very high shelves! They have an unfortunate resemblance to walls. In any case, make sure you put books for younger children within their reach. Do students freely move around, browse, do reference and read in the library?

Organisation of your material goes a long way in making your users independent. The Dewey Decimal Classification Scheme, though not very satisfactory, still gives a broad framework within which local variations can be used. It is also the most commonly used at other libraries so your young users will be at ease in whichever library they visit.

Colored strips to code different categories are very helpful. Students who replace books find this invaluable.

Finally, if you have not yet computerized your collection, start thinking about it FAST! The benefits are enormous and much easier for the librarian to monitor use and nurture openness. We have a program that was created for us by an old student. It is friendly to users from age 6 to 60! One of the many customized features is that you can reserve a book borrowed by someone, and a message is flashed to that user to please return the book soon since it is needed by such and such a person. This is a very unusual way of functioning because it puts the onus on being co-operative on the individual, and not on any system!!! You too can look at any of your alumni who can contribute a software package.

Maintenance and care are an integral part of the library. Do you get nightmares worrying about this? Do create the option of getting student helpers. In CFL, students do community work every morning and one of their jobs in the library is to replace returned books to the right locations. Also there is a group which takes up creative repair work of damaged books. Sometimes we use a library period to do this and other related book care activities. We find students take it up happily and not as a chore. Later, we display these books. One last word. In India we are usually very remiss about providing wheelchair access. Can you please push for that if you do not already have it? I am sure the management will be happy to have you alert them on this aspect

5. Use: Use comes about as a natural outcome of all the aspects we have mentioned earlier. Other ideas that have worked are

- A separate shelf for books of non-fiction for seniors and juniors. These consist of books from the subject shelves that are of general interest but do not get read often. This collection is changed every now and then and has worked well.
- A half-way-home shelf for new books AFTER they have come off the new books display and BEFORE they get hidden and forgotten in their subject shelves. We plan to keep them in this shelf for one term.
- As part of projects, children have created books of different kinds. We have a special shelf for them called In-house publications!

- Adopt-a-book. Children are encouraged to adopt a book or author. This means they must now and then check on the condition of the books, make sure they are being read and cared for!
- Story telling or reading out from a book gives a great impetus to reading.
Besides all these, you can have activities, games, projects, visits of authors, debates and many other ideas to enhance use. (We will go into these in more detail in the next workshop.)

I am not sure where this comes in but I have found it very interesting to share with the children accounts of other libraries and their practices. One favourite story is that in the Bodleian Library at Oxford, every user when asked, must recite an oath in Latin which essentially says they will not damage the books by exposing them to fire, water, food and bad handling! Another is of how libraries try to conserve space by having shelves tightly placed against one another. When the user wishes to browse in a particular shelf, he pushes a button and the shelves slide back giving the space. They always ask what would happen if two people pushed buttons for different shelves! I never found out.

6. Human Resource: This is the most valuable resource the library can have. To have a library that is alive depends on the human being caring for it. Open access is the call you as the librarian MUST make. To take the suggestions given above and to convert and adapt them to your situation is again your privilege! Try to win over teachers and management by showing how involved and energetic you are.

Above all, I hope you enjoy what you are doing because believe me it's a wonderful life!

Here are some things that are OK though they may be No-No in most libraries!

- Use of library for other events is good provided it does not dislocate the collection too much and is held at a time when there are no other users. Different people are likely to come in to the library and discover things!
- No need for deathly silence or hushed whispers in a school library. A low buzz of interactive discussion or sharing is fine.
- Rules are not always sacrosanct. They can be reviewed by the librarian and the user on a discretionary basis.
- Should the librarian be quiet and passive? Not at all! The library is on show, not the librarian, so every opportunity can be taken to highlight or project any happening or innovation there.

Bringing young people and books together

Young people, like many of us adults, have become more and more dependent on the media, internet and computer-driven software for information as well as for entertainment. With the dazzling advances in technology and the fascinating diversity of the media, it is little wonder that a young person's fancy turns more readily to them rather than to books. As educators and librarians, what is our response? The first thing is to recognise and acknowledge the benefits of each of these modes of learning. From there we can make out a case where books are still valued for their unique contribution and happily co-exist with all other forms which provide information, inspiration and entertainment.

When a child reads, there is a relationship which begins between her and the book. It is an enduring relationship, where the reader has the leisure to explore the written word at her own pace, with breaks, at any location, and what is important for a child, in any position! Young children are drawn to stories and are full of curiosity and wonder. Usually this moves naturally into a love of reading. But we may uncaringly or unwittingly dam this natural surge. Very little encouragement to read, hardly any exposure to excellent books, both in the home and school environment, too many other occupations, unmonitored TV-viewing, addiction to computer games, and even too much academic pressure can dry up the imaginative flow. Descartes, the French mathematician and philosopher said, "The reading of all good books is like conversation with the finest minds of past centuries." This is the personal and direct contact we can make through something as simple as reading!

Written language has an enduring quality that cannot easily be replaced. Reading raises questions, sparks off ideas and starts a chain of imaginative thought. By the simple act of reading, young people are expanding and enhancing their sensibilities. They are responding to strong themes, to evocative language and are being exposed to issues they cannot afford to ignore. They are able to get in touch with their own emotions, fears and joys. In reading, they are also learning to read between the lines, pick up nuances and complexities which the author has embedded in her writing. They are picking up the skill to be critical of content and form – to discern when there is insincerity or condescension. Reading also stretches the vocabulary of youngsters from age 6 upwards to age 20, and helps in making their writing more expressive. After a period of reading regularly, the reader is able to discern between fact and opinion so there is a growth of a thinking individual.

Encouraging children to read both fiction and non-fiction from a young age enables them to grapple with concepts, ideas and processes. These inputs will help

them to make sense of the world as they grow up, and also build stamina to read works of nonfiction later in life.

Now, I would like to move on to the essentials that will allow all of the above to happen. But first, think back to your own childhood. What made you read or not read? Both can help you learn about children's patterns. I feel an equal surge of satisfaction to get a non-reader reading as well as help a good reader deepen his reading.

Please use the following questions that I have posed as a check list for yourselves.

Environment

1. Have you provided the right environment for reading in your library?
Make sure that your library has an inviting, bright and colourful appearance. This can be done with the help of posters, sketches and soft boards which your young users contribute to.
2. Is the collection interesting, up-to-date and relevant to your young users?
Try to keep abreast of new books by reading book reviews, visiting bookstores and book fairs.
Keep a notebook or box for students' suggestions and take time to read them.
Take the suggestions seriously.
Take students along to select books from bookshops.
3. Have you provided comfortable and attractive reading spaces in your library?
Have different kinds of seating for different kinds of reading, reference books, computer access, journals and magazines and for browsing through the shelves..
Try to provide little nooks and corners. Children love to read in such spaces.
4. Are you, as an integral part of the environment, friendly and approachable?
There are many instances of great people who remember their school and college librarians with deep respect and affection. Can you qualify for that?!

Exposure

By exposing a child to what is in itself excellent, you can be sure that he will develop standards of his own.

1. So can you set some standards of excellence for the books in your library?
Make sure that when you buy books and subscribe to journals, you take advice from teachers, management, other leading libraries and reviews. Display new books, if possible along with any information about the author. Use assemblies for highlighting any special books or new journals by asking a teacher or parent

who has read it, to say a few words about it. Sometimes an older student can be asked too. Older students are great role models!

2. Do you believe in the value of browsing and do you actively give time for that? Something wonderful called serendipity happens then.
3. Do you subscribe to a good collection of journals?
Many college students only have time to do 'short reads' so your journals will ensure that the reading habit is kept alive for them.
4. Try to take your students on visits to other libraries. This a great learning experience for the librarian and the children.

Ease of access

This covers both availability of good material at bookshops and accessibility to the users in your library

1. Do you have open access at your library?
PLEASE! Don't lock up your shelves or keep books in metal closed cupboards. Books need to be seen, touched, smelt, browsed through and read. If you are worried about mishandling, theft and defacing,, talk to the young people directly. They will respect you for that and the few who may be misusing the library, will get monitored by the others.
2. Do you have simple methods of borrowing and returning?
This is vital. Computerise and make life simpler. Bring about trust by asking users to monitor themselves. Talk, talk, talk to them, not lecture!!
3. Are you aware that the publishing scene has never been more vibrant?
Bookstores are overflowing with new books, secondhand book stores too are growing. So people are reading. As librarians we need to get in on this act.

Encouragement

1. Do you or does the school tend to underestimate the value of reading and put it in opposition to study?
I am sure this does not happen, but we need to be alert to this possibility. As we have said earlier, it is the foundation of all learning, and enlightened managements are already aware of this. You as the librarian need to take a lead in this movement. Highlight award winning books and authors. The human being behind the book is important. Make them aware of this person. Many times children ask me, "Aunty, have you read all the books in the library?" Of course I haven't, but I know something about them all so I give that impression!
2. Do you relate with non-readers equally well?

If you do, unexpected events also help in bringing them into the world of books and reading.

3. Do you think parents need to be helped to realise the value of reading and also to monitor their children's use of computers and television?

If yes, please invite them to your library, encourage them to borrow and read for themselves and to read out to their children. Share with them your inputs on the joys and value of reading. Ask them to give books as birthday presents or as special treats. Tell them about second hand bookshops they can take their children to.

Enhancement and Enrichment

1. Do you have a weekly library period with each class?

If not, please ask for it. For college librarians, can you think of ways to attract users to your library? Have poetry reading and play reading sessions. Help them to form reading groups. Organise mini events like talks by people in your institution who have interests like astronomy or photography or trekking. Ask them to pull out relevant material in your library and display these. The momentum will pick up.

2. If you have it, do you do any activities which enhance awareness and interest in reading?

At all ages, as children grow into young adults, their burgeoning minds need guidance and nurturing to deepen their reading. So we as librarians and teachers must be able and ready to provide this enrichment to their reading.

There are a number of activities that you could do, ranging from care of the library and the books, to discussions and debates on books. (Please see further sections for ideas.)

See if you can set up your students to go once a week and read to blind children or to old people or at an orphanage. Doing this will make them aware how privileged they are to have access to books and reading.

Finally, a young person who has read widely grows into a well-rounded adult. In social and professional interaction, she can hold her own. She is quick to pick up nuances, allusions, quotations and references. We owe it to our young people to actively bring them into a lifelong contact with the best in books and reading.

Bertrand Russell said, "There are two motives for reading a book: one that you enjoy it, the other that you can boast about it."

The teacher and the library: a symbiotic relationship

The library is a responsive entity. With the best of collections, infrastructure and even services, it can spring to life only at the magic touch of the users. And in a school library the users are primarily the teachers, either directly, or indirectly, because through them, the students are initiated into becoming lifetime users.

Why is it so important that a school library be alive, vibrant, and continuously evolving?

It is the place to which fresh, young minds bring their curiosity and thirst for knowledge.

It is the place where the spirit of enquiry in teachers is met, sustained and strengthened.

It is the place where librarians face the exciting challenge of making the library a “happening” centre.

Finally, it is the place that heads of institutions realize and recognize is the core of the educational process.

The inter-relationship between all these elements also creates an inter-dependence and no one aspect can grow without the warmth and sustenance of the others!

Here, my focus is on teachers but as you will see the implications for librarians and heads is inherent.

A natural way to bring meaning to our lives is to do something we believe in. Something we feel happy to do. In such a situation, we are learning and innovating constantly. There is no room for monotony or a sense of drudgery. Learning is essential to teaching. This is a statement I cannot over-emphasize. John Dewey’s observation about the combined forces of reflection and action is significant here. As teachers you need to have, and to convey to students this reflective-learning stance. Changing circumstances, new developments, technological and psychological transformations that are taking place all around us demand that as teachers you have an intelligent response. This is necessary to tackle new issues that are thrown up each day that may even become obsolete by tomorrow! The nature of academic learning is also influenced by the availability of and use of, new technologies.

As teachers and educators, can you see yourselves opening a conversation when you begin a lesson? In order to carry on an interesting and rich conversation, and even to communicate clearly, you must have some resources to draw upon. It is impossible to draw on one’s resources without replenishing them frequently. So....Enter the library—your school library...other libraries—to restore and refurbish and refresh your store of abilities and knowledge.

Educators know from experience that it is necessary to understand an area of learning in order to teach it well, but that understanding on its own is not enough. So what else is needed? First, a deepening of knowledge in the specific content area of your subject. Second, a broadening of perspective. Connections and links, both local and global are made. How does this help the individual, the student and the institution? For the individual I would say there is tremendous potential for personal growth. Existing interests strengthen, new questions arise and the process of self-development is well on its way. There is not just the appearance, but also the fact of self-confidence. It does not need a psychologist to tell you what that means to your general sense of well-being and harmony.

As for the institution – an innovative, confident and creative teacher is a valuable asset. She is a strong spokesperson for the place as well as being an individual in her own right. The really good teacher is one who can call her soul her own.

For the students, a teacher who is well-read, both in her own subject and outside it, provides a model and a source of inspiration. A teacher who has a strong base of reading, reference and research has an air of quiet authority and security. A young student at our school was particularly struck by the fact that Albert Einstein's teachers at his high school punished *him* when *they* could not answer his questions! The primary role of reading, researching and referencing is done by the teacher but gradually as the students begin to use the library more extensively, they take over the primary role and look to the teacher only for affirmation and confirmation. They are ready to be self-sufficient. However the teacher continues to be the motivator and the facilitator.

But – and I should have asked these questions first – Do you believe and trust that time spent in the library is time well spent? Do you have a positive attitude to the library? If the answer is YES, I go on to list a few more areas of self-development that the library can provide.

- Read to understand how what you are teaching fits into the overall curriculum. If, as a teacher, you are part of curriculum meetings, you need to be clear what the issues are.
- Read to enhance your teaching and communication methods – classroom management, current approaches and innovative techniques.
- Read to recognise and understand a particular child's difficulties – physical or psychological. Parenting and teaching are both highly demanding and creative responsibilities.

Even when a teacher has all this background, I am sure you see the necessity for ongoing updating.

How do you actualize this and begin?

1. The first step is to orient yourself to the library and the varied facets of the collection as well as the services provided. I always ask librarians to begin the school year with a 'familiarising and getting acquainted with the library' session. But if for any reason it does not happen, make the first move yourself. Next, you must constantly throw friendly challenges to the librarian. Access to material, availability, ease in searching and finding, quiet time for browsing, suggestions for the collection and arrangement, queries for reference....go ahead. No librarian worth her salt should object provided it is done in the right spirit. Talk with students to discover areas of special interest. Talk with the librarian to search for, highlight and make available relevant material.

2. Use a variety of media to teach. Take your students to the library to show them related material – videos, CD-ROMs, films, maps, audiotapes, archival material.....

3. Primary class teachers : Use poetry books to do projects. Choose a story and get your class to write scripts and enact them. Use books on crafts, science experiments, clay work, maths puzzles to evoke individual responses in your students. For any fair or mela, get ideas in the library for motifs, decorations, artwork....the possibilities are endless.

4. For older classes, I have invited teachers to come in and do a book talk on a book they have read recently. Students are intrigued to see their subject teacher in a different garb. For the teachers too, it is an opportunity to bond with their students differently. One idea that I had was for book talks to happen within a class in the specific subject areas. For example, a Maths teacher or a Biology teacher could recommend that some books which would deepen the interest of the student in the subject be read and presented in a book talk. This is very different from a general book talk in the library where a larger audience attends. Here with a subject-oriented book talk, the teacher will find the possibility of a discussion taking place based on the book.

5. Teachers' suggested readings both in Fiction and Non-Fiction are displayed or listed on the library board. Teachers, you can also alert students and even your colleagues regarding any interesting articles you have read in a periodical in the library.

6. Usually projects done by various classes are displayed in the library. If you as a teacher visit regularly, seeing these might trigger off ideas for you. Also, if you see a student's efforts in a different area, it would help you to view that student in a fresh light.

7. If you have any artefacts from a trip you have made, you can exhibit them in the library and talk about them, if possible. If you have some memoirs or old scrapbooks of archival interest, bring those in for a temporary display.

8. Use the newspapers and journals to do a unit on current events. Bring about discussion and debate on terrorism, the war in Iraq, India-Pakistan relations, gender issues...the list can go on. If you alert the librarian, she can look for relevant material of all kinds.

9. At our school and earlier where I worked, teachers always came along on book-buying trips to stores, sales and book fairs. So there is an immediate correlation between the selector and the user! Then too, teachers have come in to help with weeding out and discarding books in their subject areas. This is a tremendous help for the librarian who does not have specific subject expertise.

10. Suggest visits to the outside, suggest visitors from outside – any interesting contacts you may have. All this enriches the library which in turn enriches you.

11. Teachers' writings and participation in seminars or workshops must be shared on the library board. Some teachers have actually written books about their experiences and efforts, which naturally find a valued place in the library. When school excursions take place, the teacher and students maintain a diary. This too finds a place in the library for future travellers or even for informative reading.

12. Suggestions on aesthetics and ambience in the library will surely be welcomed by the librarian since it comes from a genuine interest and involvement from the teacher.

13. Remember, teachers, to take your students to the library for reference sessions. A change of scene will be refreshing, and work wonders on both you and the students!

You may now ask, how am I to do all this? Where is the time? This is where enlightened management comes in. In each teacher's time-table, put in one period a week as a personal library period – not to be confused with bringing students in for a reference period. Believe me, this is not an imposition. After just one term, you will be looking forward to this period of quiet browsing, leisure and freedom to pursue your interests. The management must recognise that this is a long-term investment and encourage this move.

As a librarian, may I list the following Don'ts for the teachers and the heads please?

DON'T send students to the library as a punishment for some failing.

DON'T send them there to complete their homework either. Both these give

the wrong message.

DON'T use the library as a classroom (lecturing time) or a meeting room.

DON'T use the librarian as an office clerk or general dogsbody.

DON'T use the library collection as a showcase to impress visitors. If a library is doing what it is meant to do – it should be full of users and less full of books!

Till now I have not given any specific ideas or suggestions to librarians but I am confident that as you are reading, you are picking up the connections and links to your own place in this network. There are three categories of users that make us librarians who we are! They are the students, the teachers and the management. We need to embark on a relationship of trust, efficiency, dependability and friendliness with all three sets of users.

The students are the easiest to win over. They are young, open and eager to learn. Show them clearly by word and deed that you are there to help them and guide them regarding new technologies and to make resources available.

- Make them feel welcome in the library.
- Invite them to help you. Take their suggestions for books and improvements in the library seriously.
- Photocopy material which they need. Volunteer to do this rather than as a big favour! If you see a great demand for some books, ask the management to let you buy one or two more copies, assuring them that there will be good use made.

Now for the teachers...as librarians we must MAKE them believe in the efficacy of the library. You can only do this by your actions and your services not just by word alone. You must convert them to become regular users and strong supporters of the library. Their presence in the library is the proof of this.

First, invite them for an orientation to the library, literally a guided tour. Show them your collection of maps; make them aware of the play scripts available. What about unusual books that may be tucked away and forgotten? Pull them out and show them. Newsletters and pamphlets from related institutions should be made available to them.

If you know of the special interests of the teachers, be sure to alert them about any corresponding material. At the beginning of the year, get the teachers to fill in a form listing their needs and projecting their plan of topics for the term. The form could also ask for interests other than what they are teaching. Also ask them for suggestions. This puts the onus on them not us! Ask them for a commitment on what they would like to be involved with, i.e. any particular aspect.

You as the librarian are in a unique position to provide an alerting service to the teachers because you have a picture of the whole library. So without too much effort on their part, teachers can present a multi-dimensional approach to their teaching.

Now for the management or heads. Probably the greatest level of difficulty is to have a smooth but open and frank relationship with the management. Don't forget though that without their encouragement and support, you would probably not be here today, listening and participating. To win over the trust and confidence of the head is the most important task, because if that does not happen, many of the things I have said today become meaningless and just words. Be bold in word and deed. If you have and show clarity, energy and commitment, the head must listen. After all teachers and librarians are the ground on which the school stands or falls.

Now what of ourselves as librarians? What can we do to bring enrichment to our lives?

- Create a climate of confidence – not authority and arrogance.
- Put in the effort to be familiar with your own collection and resources. I often hear children tell each other – “Aunty has read all the books in the library!” Obviously not but I do create that impression because I have some idea about all the books. I watch and remember who has read the book, what they said about it, who gifted it or where it was bought...I remember the author, the illustrator, the publisher...enough to make the connection when I hear of something related next time.
- Wherever I go, I am always looking out for ideas that catch my eye. As a teacher or a librarian, I can bring them back to my library and my classroom.

Librarians manage users and resources. Teachers manage students and subjects. So can you find a more dynamic information team than teachers and librarians?

Section Two: Workshops for Junior Age Groups

Junior Math

Arthi Saktheeswaran and Suseela Kumaravel

Mathematics for five to ten year olds

It is important for us educators to continuously enquire into the following two fundamental questions:

- 1) What comes in the way of learning?
- 2) What facilitates learning?

When attempting to answer the first question it is very clear that fear is one of the main factors that come in the way of learning. It could be fear of the subject and/or the teacher or the fear of not being able to meet the expectations of parents/teachers. Fear of being ridiculed if the answer is wrong can prevent the child from trying. Comparison and competition too breed fear. Learning suffers when the teacher is only interested in finishing the curriculum. Learning cannot take place when parents/teachers are anxious about the results.

The answers to the second question follow from the first. It is imperative that the learning atmosphere is free of fear. Parents and educators need to continuously work together to cast their expectations aside. We need to bear in mind that each child's abilities and potential are unique and hence comparison has no place if one wants to facilitate learning. While competition might achieve short term goals, it cannot bring about an internal motivation to work. As children, especially the young, are naturally interested in learning, our work as teachers becomes easy and enjoyable if we take on the role of facilitating that learning.

Now, how do we teach mathematics to the young? Our job is often made easy because almost all the children who come here seem to 'like' mathematics. Occasionally we come across exceptions. Sometimes, when a child enters CFL she/he avoids math saying that he/she doesn't like it. Often before the end of the first term such statements disappear.

We cannot teach a subject that we don't love ourselves. We cannot help a child learn it if there isn't a rapport between us. When fear is eliminated obviously it allows for a rapport to build up. Thus when all the above factors are taken care of then learning continues to take place provided there is leisure for the teacher and the taught.

I am sure all of you know that the young need to start leaning mathematics

using concrete materials and then move on to pictorial representations and finally to abstraction. The child needs to experiment/explore with concrete materials till the concepts are clearly understood. The emphasis obviously is on understanding rather than learning the algorithm through repetition. There have been times when we have allowed a child to carry on with algorithms if understanding didn't come about after varied attempts and such children often have difficulty with word problems. It goes without saying that such children need remedial help.

Children need encouragement to try out different ways to solve problems. They need to understand that different methods can lead to the same answer. One last but important factor for the teacher to remember is to begin 'where the child is at'. Often for the six year olds moving from addition to subtraction is a leap and then to move from there to subtraction with borrowing is an even bigger leap. Thus when they encounter the following problem they often go about solving it the way it is described below:

Raghu has Rs34/ and Raji has Rs25/. Who has more? How much more? Often the correct answers are arrived at very quickly. When asked how they got Rs 9/ invariably they say that they counted from 26 to 34. Then they are asked to write the number sentence which they do as follows: $25 + 9 = 34$. Of course this is correct. When asked to write a number sentence using subtraction they find it difficult. One thing that helps is giving the child the same kind of problem involving smaller numbers. The patience with which this situation is handled is bound to bear fruit later. It is actually very rewarding to know that by the time the children come to the next level this concept is well mastered.

I would like to mention something that all of you must be doing as well i.e. combining fractions with cooking and money obviously with shopping games. Estimation helps them learn about measurements. Through the years they are encouraged to estimate endlessly.

Out of all the materials we use some are worth mentioning here.

- 1) Straws and rubber bands for place values
- 2) Play money
- 3) Response cubes
- 4) Response wheels
- 5) Decimal chart
- 6) Game mats
- 7) Thinking Stories

In this workshop we would like to focus on thinking stories which is an

important aspect of our curriculum. Levels one, two and three have 20 thinking stories each and about 200 word problems, while levels four and five have a different format; in these levels there are longer stories and each story is divided into three – six parts. We have prepared a sample booklet comprising of two thinking stories from each level. We have made use of the ‘Real Math Open Court’ thinking story books for this purpose and adapted the stories to suit Indian contexts.

While doing thinking stories with the children many of the factors that are conducive to learning are taken care of often without a conscious effort. I will mention these factors below:

- Development of lateral thinking – children get to understand that there are different approaches to the same problem.
- Opportunity to look at what it means to ridicule/ get ridiculed. One of the characters in the story is characterized purposely as someone who cannot work with numbers. The other characters patiently explain everything to him. Children listening to this hopefully begin to patiently explain what they know to those that don’t know.
- Understanding is more important than just getting the answers. Children realize that yes, no or can’t tell answers require explanations.
- When faced with questions that have more than one correct answer, children feel happy that their answer is as valid as another’s. They learn this through debating their explanations.
- Slowly, the sense that ‘I am right therefore I am great’ or conversely ‘I am wrong and hence I am useless’ loses its strong hold. This learning speeds up when there is no trace of comparison in the teacher’s mind.
- Children learn to be patient with those that need more time to solve a problem.

For every 7 – 8 lessons there is a thinking story and each story is connected to the concepts being taught through the lessons. It is needless to mention here that these concepts get very much reinforced through the stories and the subsequent word problems. There are also problems that reinforce the earlier concepts learnt especially in the lower levels.

The format changes in Level 4. There is one main story which has four or five parts. These parts are interspersed amongst the lessons. The children gradually work through the parts to solve a plot completely only at the end of the last part.

The main characters in the Thinking Stories

Each of the characters in the ‘Thinking Story’ is unique; they each have their own style of thinking and mannerisms. The children learn to recognize the flaws in the thinking and try and avoid it.

Venkatesh Uncle is always forgetting things. The children learn to keep in mind the kinds of things that he forgets.

Raju is over-confident and impulsive. The children learn to consider the facts that he ignores.

Rashmi, Raju’s younger sister, is more careful and does not jump to conclusions.

Parvathi Aunty is very unclear in what she is talking about and people find it difficult to understand what she is talking about.

Krishna Uncle usually talks a lot and confuses people by giving irrelevant details. The children learn to distinguish the relevant from the irrelevant.

Vivek often asks questions that help people clear up their problems.

Sanjana thinks that everything happens by magic.

Raghu Uncle is very creative and always makes something new from material that he has. The children learn to perceive what he has made through mental imagery.

Akash only wishes for what he wants to happen. The children think of ways to make things really happen.

Level 1 Subtraction

Maya’s Magic Minus Machine

Maya was dreaming about a magic machine again. This machine was just like the ones she had dreamed about before, except that if you put in 5 things, it would give back 4; if you put in 6 things, it would give back 5; if you put in 9 things, it would give back 8.

What was the machine doing? (Taking away 1)

When Maya woke up, she decided that she could build a magic machine like that. She found a big, big box. On it she painted a sign that said “MAGIC MINUS MACHINE. Whatever you put in the top, you get back 1 less at the bottom. FREE!”

Maya put the magic machine out by the gate in front of her house and hid inside it. Soon children began flocking around the machine and reading the sign. “It’s free!” Rashmi said.

Vivek was the first to try it. He put in 7 sticks. The machine went “Boom-Boom” and out came 6 sticks at the bottom.

What do you think made the machine go “Boom-Boom”?

What do you think happened to the other stick that Vivek put into the machine?

Raju wanted to try the machine next. He put in 9 marbles.

How many marbles will he get back? (8)

“Hey,” said Raju, “the machine kept 1 of my marbles!” Raju was angry and walked away.

Vivek tried the machine again. He put in 4 bubble gums.

How many bubble gums will he get back? (3)

The machine went “Boom-Boom” and out came 3 bubble gums at the bottom. Vivek didn’t like that very much, but he said, “I’m going to put them back in the machine, and maybe this time more will come out.” He put his 3 bubble gums into the machine.

Will he get back more than 3?

This time the machine gave him back only 2 bubble gums. That made Vivek angry, and he walked away.

Rashmi felt in her pocket and found 5 bean seeds that she had been saving to plant. She dropped them into the Magic Minus Machine and waited eagerly to see what would happen.

What will happen? (She’ll get back 4 seeds)

The machine went “Boom – Boom” and out came 4 bean seeds. “Nasty machine!” said Rashmi, and she walked away. Soon none of the children would have anything to do with Maya’s Magic Minus Machine.

Why not?

Then Akash the Wisher came along. He had just finished eating a banana. “I wish I had someplace to put this banana peel,” said Akash. “I wish there was a wastebasket right here.” Then he noticed the Magic Minus Machine. He put the banana peel into the top.

What do you think will come out the bottom?

When you put in 1 banana peel, how many banana peels do you get back? (Zero)

The machine went “Boom – Boom,” but no banana peel came out the bottom. After that, whenever people had some trash to get rid of, they put it into Maya’s Magic Minus Machine.

Problems

1. Maya dreamed about another magic machine. She put in 3 tamarind seeds and got back 6. She put in 2 cards and got back 4. She put in 1 card and got back 2.

What was the machine doing? (Doubling the number)

What will Maya get back if she puts in 4 sticks?(8 sticks)

2. All the children were eating dosas. Akash was the second one to finish. Maya was the fourth.

Who ate faster- Maya or Akash? (Akash)

How can you tell?

3. Rashmi saves Rs 2/ every day.

How long will it take her to save Rs 20/ (10 days)

4. Rashmi was learning to walk on stilts. The first day she could take 2 steps before falling. The next day she could take 4 steps. The next day she could take 6 steps.

How many steps would you guess she could take the day after that? Why do you think so?(Any answer will do, although 8 is the obvious one. What is of interest is the reason given.)

5. Akash got 4 chikkis. "I'm only going to eat 2 chikkis every day," said Akash, "so they'll last a long time."

How many days will they last? (2)

6. Rashmi needed to go to Venkatesh Uncle's house, she walked past one house with her friend Deepika. Then she had to walk past 3 times as many by herself.

How many houses did Rashmi go past?(4)

7. Akash walked half a kilometer to the post office. Then he walked half a kilometer to get home.

How many kilometers has he walked altogether? (1km) How many meters has he walked altogether? (1000 meters)

8. Raju decided he was going to be nice to 5 people today. He tried and tried, but so far he has managed to be nice to only 2 people – himself and Venkatesh Uncle.

How many more people does Raju need to be nice to? (3)

9. "This is the fourth time I've been to the zoo," said Rashmi.

How many times had she been to the zoo before? (3)

10. Rashmi had 4 dolls. She gave a doll to Akash and a tennis ball to Maya.

How many dolls does she have left? (3)

Level 1 Planning and Measurements

Vivek Builds a Birdhouse

Vivek has been learning carpentry in school and in the holidays he built a big, beautiful birdhouse. He made it out of a wooden box. He put a roof on it,

painted it green, and set it on a post in the back garden. Behind his house there was a mango grove. Since there was a mango grove many birds came to visit Vivek's back garden too. A pair of hoopoes came and looked at it, but they didn't go in. "No wonder," said Vivek's mother. "You forgot something important."

What do you think Vivek forgot?

"I see what it is," said Vivek. "I forgot to make a hole in the front of the birdhouse so the birds can get in!"

Vivek went down the street to Venkatesh Uncle's shop and borrowed a drill from him. With it Vivek drilled a hole about 3 centimeters wide in the front of his birdhouse.

How wide is 3 centimeters? Show with your fingers. (Demonstrate the correct width)

The next day the hoopoes came again and looked at Vivek's birdhouse again, but still didn't go in.

Why not?

"I'm afraid that hole is too small for those hoopoes," said Vivek's brother. "What you need is a hole that's the same size as the hoopoes."

Vivek went back to Venkatesh Uncle and told him he needed something to cut a bigger hole in his birdhouse. "Exactly how big?" asked Venkatesh Uncle.

"I don't know exactly," said Vivek. "It should be a sort of hoopoe-size hole."

"You'll have to find out how wide the hoopoes are before you'll know how wide a hole to make."

Vivek took a ruler and went out and tried to measure the hoopoes.

Do you think that worked? Why not?

The birds were friendly because Vivek had often been feeding them and he had no trouble getting close to them; but every time he reached out to put the ruler against one, it flew away.

Vivek's friend Rashmi said, "I have an idea. Why don't you find a picture of a hoopoe in a book and measure the picture? The picture won't fly away."

Does that sound like a good idea? Why not?

Vivek's father was interested in bird watching, so there were many books on birds in the house. Vivek looked through Salim Ali's book on Indian birds until he found a picture of a bird that looked just like the hoopoe that had come to his bird house. He measured the picture with his ruler and found that the bird was 3 centimeters long. "That can't be right," Vivek said.

How did Vivek know that couldn't be the right size? (If birds are wider than 3

cm, they surely must be longer.)

Vivek took the bird book over to Venkatesh Uncle's house and showed the picture to him. "Here's the kind of bird it is," said Vivek, "but I can't find out what size it is."

"Oh, I know that kind of bird," said Venkatesh Uncle. "There are some birds like that building a nest in my house, up in the bathroom."

"How do they get in and out of your bathroom, if the door and the windows are shut?"

"There's a hole in the wall just big enough for them to get through," said Venkatesh Uncle. "I had that hole made to fix a tiny exhaust fan, it hasn't been done and now I will wait till the birds have raised their young."

Does that give you an idea?

How could you find out what size hole to make in the birdhouse?

Vivek hurried up to Venkatesh Uncle's bathroom and measured the hole in the wall. It was just 7 centimeters wide.

How wide is that? Show with your fingers. (Demonstrate)

Venkatesh Uncle didn't have a drill 7 centimeters wide, but he has a little saw that would do the job. He and Vivek cut a neat hole 7 centimeters wide in the front of Vivek's birdhouse. Before long the hoopoes came back. This time they went inside and came out again and soon began bringing grass and feathers to put inside their new home.

Problems

1. "I want to measure the inside of this box," said Vivek, "but it's too small to get the ruler inside."

Can you think of some ways to measure the inside of the box? (by using string, a paper strip and so on)

2. Akash has a piggy bank with different slots for 50 paise and one rupee coins. The one rupee coins will not fit into the slot for the fifty paise coins. Do you think a 50 paise coin will fit in the slot for the one rupee coins? (Yes)

Why? (A 50 paise coin is smaller than a one rupee coin)

3. Parvathi Auntie likes rings, so her husband bought her a ring for every finger on each hand, including the thumbs.

How many rings did he buy her? (10)

4. Maya had 2 one rupee coins. She spent 1 for a red balloon.

How many one rupee coins did she have left? (1)

5. Rashmi has 9 marbles. Akash has 1 more than that.
How many marbles does Akash have? (10)
6. Vivek walked 1 kilometer to school. After school he got a ride back home.
How many kilometers did he walk altogether? (1)
7. For snacks Venkatesh Uncle ate 2 ears of sweet corn and 2 katoris of puffed rice. He forgot to clean his plate and just left it next to the sink in the kitchen.
How many corncobs were on the plate? (2)
8. A mother duck had 4 ducklings. When she wanted to go somewhere, she quacked so the ducklings would all follow her. One day when she quacked, 1 duckling came out of the basket and 2 came out from under a bush. After a while another duckling came out of a pile of straw.
How many ducklings were still lost? (Zero)
9. Raju lives in an apartment on the second floor. One day he looked out his window and said. "I wonder how far it is to the ground."
How could he find out? Can you think of ways to measure how far it is? (Drop a string, then measure it; measure from the first floor to the ground, then double the measure; ask somebody who knows; estimate on the basis of a known height nearby.)

Level 2 Fractions

Half a job

Even though Venkatesh Uncle was not very good with numbers he was very good with his hands; he could do all the repairing jobs in his house himself. For some time now he hadn't found time to do all the maintenance work, so year by year, things grew worse in Venkatesh Uncle's house. "Everything needs fixing, everything needs painting," he groaned.

"I'll tell you how I handle that problem," said Parvathi Auntie who lived near by. "When a job is so big that I don't feel like starting it, I just do half the job each day. That way it isn't so hard."

How long does it take Parvathi Auntie to do the job? (2 days)

"Half the job each day," said Venkatesh Uncle. "That sounds like an excellent idea. I'm going to try it. I think I'll start today with painting the walls in this room."

"Good luck," said Parvathi Auntie. "I'll be back in a week, and I expect I'll find this house in much better shape if you follow my advice and do half a job every day."

Venkatesh Uncle got out paint and brushes and he started painting the walls in that room.

How many walls should he paint the first day if he is going to do half the job?(2)

After careful counting, Venkatesh Uncle discovered that there were 4 walls in the room. And he figured out that half of 4 is 2. And so the first day he painted 2 walls.

The next day Venkatesh Uncle got out his painting materials again and was ready to start work. "Now, what was it Parvathi told me to do?" he asked himself. "Ah, yes, I remember. Do half the job each day. There are 2 walls that need painting, so if I do half the job today, that means I paint 1 wall." Venkatesh Uncle painted one of the walls.

Do you think that is what Parvathi Auntie meant? (No)

What should Venkatesh Uncle do instead? (Do the other half by painting both walls)

The next day Venkatesh Uncle said, "This idea of doing only half the job each day really makes life easy. It didn't take me very long at all to do my painting yesterday, and today it should take even less time."

How many walls are left to be painted in the room? (1)

How much do you think Venkatesh Uncle will paint today? (Probably $\frac{1}{2}$ of the wall)

Venkatesh Uncle noticed that only 1 wall in the room needed painting. Since the rule was to do half a job each day, he painted only half the wall that day.

How many walls has Venkatesh Uncle painted so far? ($3\frac{1}{2}$)

How much painting is there still left to do? (Half a wall)

Do you think Venkatesh Uncle will finish the room the next day? Why or why not?

The next day Venkatesh Uncle had a very easy job. There was only half a wall left to paint. So his job was to paint half a wall. But he remembered that he was supposed to do only half the job that day.

How much did Venkatesh Uncle paint that day? ($\frac{1}{4}$ of the wall)

How much of the last wall is still not painted? ($\frac{1}{4}$)

About how wide would a fourth of the wall in an ordinary room be? (Maybe 1 meter)

By the next day there was only a strip of wall left to be painted, and it took Venkatesh Uncle just a few minutes to paint half of it. Every day the strip of wall

that was unpainted grew narrower. Every day Venkatesh Uncle painted only half of what was left.

Do you think Venkatesh Uncle will ever finish painting the wall?

Why or why not?

A week later Parvathi Aunty stopped by to see how Venkatesh Uncle was coming with his work on the house. "What have you been doing?" she asked. "Just painting the walls in this one room," said Venkatesh Uncle.

"That's strange," said Parvathi Aunty. "I thought that job would take you only 2 days."

Why did Parvathi Aunty think it would take only 2 days to paint the room?

"You've done a beautiful job of painting this room," said Parvathi Aunty, "but you seem to have missed a little strip on this wall."

Why is there a little strip that isn't painted?

"I haven't missed it," said Venkatesh Uncle. "I'm still working on it. I'm following your good advice and doing half a job each day. For a while the work kept getting easier and easier because every day I had less to paint. But now it's getting harder. The strip is so narrow that it's very difficult to paint only half of it. I have to go very slowly, because if I'm not careful I might make a mistake and paint the whole strip at once."

What would happen if Venkatesh Uncle painted the whole strip at once? (He'd finish painting the room)

"I'm afraid I didn't explain my idea well enough," said Parvathi Aunty. "I meant that you should do half the job the first day and the rest of it the next day. That way you do the whole job in 2 days."

"That's a hard rule to follow," Venkatesh Uncle said. "You have to remember what the whole job is. It's easier for me if I just look each day and see what needs to be done and then do half of it."

"Then I think you'd better just forget about my advice and try to do a whole job in one day," said Parvathi Aunty. "Otherwise it will take you forever to finish one job."

Why would it take Venkatesh Uncle forever to finish?

(He always left half of what there was yet to paint.)

Problems

1. Venkatesh Uncle wanted to build a fence 3 meters long in his kitchen garden. He built 1 meter of it the first day. The next day he built half as much as the day before, and the next day he built half as much as that.

Is the fence finished? (No)

Does Venkatesh Uncle have more or less than 1 meter left to build? (More)

2. Venkatesh Uncle started reading a book. The first day he read for 2 hours. The next day he read for half as long, and the next day he read for half as long as that.

About how many pages has Venkatesh Uncle read? (Can't tell; we know how long he read, but we don't know how much he read)

3. A painter left his ladder leaning against the wall of a house. The ladder was 4 meters long.

About how high up on the wall do you think the ladder reached? (3 to $3\frac{1}{2}$ meters would be a good guess, but certainly less than 4.)

4. Krishna Uncle had 200 notices to put up around town. He gave half of them to Vivek, one-fourth of them to Maya and the rest to Akash.

How many notices did Vivek have to put up? (100)

How many did Maya have? (50)

How many did Akash have? (50)

5. In her cupboard Parvathi Aunty had 3 cans. They were all sealed shut, they looked alike, and none of them had a label. "I need some cotton," she said. "I know that one of these cans is filled with cotton, another is filled with sand that I brought back from Jaisalmer after my vacation there, and another is filled with water from the Ganges. I wish I didn't have to open all of them to find the one that is filled with cotton."

How could Parvathi Aunty tell which can is filled with cotton without opening any cans? (by picking the one that is the lightest).

6. Parvathi Aunty asked Vivek to go to 5 shops to do shopping for her. "How long will that take?" asked Vivek.

"The shops are 10 meters apart and it takes about 5 minutes to go from one shop to another."

Does Vivek know how long it will take him? (No)

Why not? (He doesn't know how far it is to the first shop, then he doesn't know how long he will be in each shop, and he doesn't know how long it will take to get back from the last shop)

7. "I know all about fractions," said Raju. "You asked me what one-third of 30 is. That's easy. It's 27."

What is one-third of 30? (10)

What did Raju do wrong? (He subtracted 3 from 30)

8. “My cat is 10 years old and weighs 3 kilograms,” said Vivek. “How much does your cat weigh?”

“My cat is 3 years old,” said Rashmi. “So she must weigh 10 kilograms.”

Is Rashmi right? (No)

Why not? (Her cat’s age is the same as the weight of Vivek’s cat, but that does not mean that her cat’s weight is the same as the age of Vivek’s cat)

9. Akash promised Anita, his younger sister, that he would clean all the toys out of her sandbox and fill it with sand. She had toy animals and cars and trucks and buckets and spades all over the bottom of the sandbox. “Three bags of sand will fill the sandbox to the top,” their father said. But when Akash started pouring sand into the sandbox, he found that it was full after he had emptied only 2 bags of sand.

Can you think of any reason why the sandbox wouldn’t hold 3 bags of sand? (Akash forgot to clean out either the toys or the old sand.)

10. Krishna Uncle had a dog rearing business. One day Vivek, Maya and Raju helped him. “Here’s some pocket money for you,” said Krishna Uncle. “Raju, you worked 8 hours, so you get half of it. Maya and Vivek, you each worked 4 hours, so you each get one-fourth of it.”

Did Krishna Uncle divide the money fairly? (Yes)

How can you tell? (Raju got twice as much for working twice as long.)

Level 2 Measurements

Measuring Comet

Krishna Uncle loves dogs and he very often looks after other people’s dogs when they go on holidays. He also runs a dog training school.

“I could use some help,” Krishna Uncle said. Maya and Rashmi who were there at the moment said they’d be glad to help.

“It won’t be as easy as it sounds,” Krishna Uncle told them. “I need to find out some things about this dog, Comet. First I want to know how much he weighs; he hasn’t been eating well since coming here you know. There’s a scale in the workroom. Tell me how many kilograms Comet weighs, if you can find out.”

Rashmi and Maya thought that would be easy. They took Comet and set him on the scale, but he jumped right off. They tried again, and again; but he jumped off before they could see how much he weighed. Maya tried casting a magic spell over Comet, but even that would not make him stand still. He was a very lively dog.

“This isn’t as easy as we thought,” said Maya.

Do you have any ideas about what they could do?

"I'll hold him on the scale and you read what it says," Rashmi suggested.

Rashmi had to press down hard on Comet to keep him from jumping off.

"Twelve kilograms," Maya read.

Do you think that is what Comet weighs?

Why not?

"I'm not sure that's right," Maya said. "The harder you press to hold him down, the more he seems to weigh. I think you're pushing the scale down. Let me try."

Maya picked Comet up and held him so that his paws just touched the scale.

"Two kilograms," Rashmi read. "I didn't think Comet was that light."

Do you think 2 kilograms is the right weight?

Why not?

"I think you're holding him up so that his whole weight isn't on the scale," Rashmi said.

"That makes him seem lighter than he is. I have another idea."

Rashmi held Comet in her arms and stood on the scale with him. The scale read 33 kilograms.

"Thirty-three kilograms!" Rashmi said. "This dog is a monster! Funny, he doesn't feel that heavy."

Do you think that is how much Comet weighs?

What is Rashmi weighing? (Herself and Comet together)

The girls thought and thought. They waited, hoping Comet would fall asleep so they could lay him on the scale. But Comet kept jumping around, lively as ever. Finally Rashmi had an idea. She stood on the scale alone.

"I weigh 23 kilograms," she said.

How can that help them find out how much Comet weighs?

If Rashmi weighs 23 kilograms and Rashmi and Comet together weigh 33 kilograms, how much does Comet weigh?(10 kg)

"I get it, Rashmi, Maya said. "If you weigh 23 kilograms and you and Comet weigh 33 kilograms together, then Comet must weigh 10 kilograms, because 23 and 10 make 33. That's almost magic."

They rushed to tell Krishna Uncle, who was proud of the girls for being so clever. "Since you were so good at finding out how much Comet weighs," he said, "perhaps you can find out how tall he is."

The girls thought that would be much easier. Maya took a meter stick and

stood it up beside Comet's head while Rashmi held him still.

"I can't tell," Maya said. "Sometimes the top of his head is about 40 centimeters high and sometimes it's only 30. He keeps bobbing his head around too much." "Naughty Comet!" Rashmi scolded. Comet felt bad at being called naughty, and he hung his head low.

"Now I have it," Maya said. "He's only 20 centimeters high."

Do you think that is right?

Why not?

"His head is lower than his back now," Maya said. "That will never do. Here, let me try some magic on him." Maya held her magic wand over the dog and said, "Sit, Comet, sit!" Comet obediently sat up on his hind legs and held very still.

"Now he's 50 centimeters high," Rashmi said. "I'll bet that's right."

Do you think it is? Why not?

"I'm afraid that won't do either," Maya said. "When he's sitting up that way it's more measuring how long he is than how tall he is."

The girls had run out of ideas. They went to Krishna Uncle sadly and told him that they had failed. "Comet is a different height every time we measure him," Rashmi said. "He just won't hold his head in the same place all the time."

"That's the way dogs are," said Krishna Uncle. "That's why we usually measure their height at their shoulders instead of their heads. Didn't I tell you that?"

Problems

1. Krishna Uncle was teaching Vivek how to give medicine to a dog. "Hold the dog's lower jaw tightly with your left hand; then give it the medicine."

Which hand should Vivek use to give the medicine? (The right)

2. "We have some collars, but we don't have enough," said Krishna Uncle. "Each dog needs its own personal collar, and there are 10 dogs. Will you go to the shop and buy some, Vivek?"

Does Vivek know how many to buy? (No)

Why not? (He doesn't know how many collars they already have)

3. "Comet likes to be walked exactly 2 kilometers a day," said Krishna Uncle. "He was walked 70 meters this morning, I walked him 80 meters about an hour after lunch, and I'll be walking him 50 meters this afternoon. Maybe he would like another walk this evening."

How many meters will Comet want to walk in the evening (zero)

Why? (He will have already walked 200 meters)

4. Vivek asked Raju to help him give deworming medicine to the dogs at

Krishna Uncle's house. "There aren't many dogs today. There would be 10, but 2 are being walked, 2 are at the veterinarian's and 3 are sleeping."

How many dogs will the boys have to give the medicine to? (3)

5. Krishna Uncle was giving Vivek his work for the day. "Feed all the dogs and walk them before they eat," he said. "And you'll have to get the dog food out of the garage."

How many things does Vivek have to do? (3)

What should he do first? (Walk the dogs)

What should he do second? (Get the dog food)

What should he do third? (Feed the dogs)

6. Raju asked Vivek if his father gave him enough pocket money for helping him look after the dogs. "Not really," said Vivek. "He gives me Rs 10 a day, and he's paid me that ever since I started helping him. I probably should ask for more pocket money."

"How long have you worked for him?" asked Raju.

"Five days," Vivek answered.

How much has Krishna Uncle given Vivek? (Rs 50/)

7. Parvathi Aunt was taking an airplane trip. She was going to Singapore. She was allowed to take only 20 kilograms of luggage on the plane. Parvathi Aunt piled all the clothes and other things she needed on a scale and found that they weighed exactly 20 kilograms. Then she got her old suitcase from the loft and put the things into it. When she arrived at the airport she had to put the suitcase on a scale there. "I'm afraid you're overweight," said the airline agent. "Your luggage weighs 23 kilograms."

What had Parvathi Aunt forgotten about? (The weight of her suitcase)

How much does her suitcase weigh when it is empty? (3kg)

8. Raju told Rashmi that the small five star bars were Rs 5/ each. "Here's a ten rupee note for one of them," she said.

How many five stars could Rashmi really buy for Rs 10/? (2)

9. Eleven of the children in Vivek's class have been sick all week. Two have colds, 4 are well to come back to school, and the rest have chikungunya.

How many children are still sick? (7)

10. Krishna Uncle has 7 dogs at the training school. He was able to teach 4 of them to walk on their hind legs. He can never teach stubborn dogs or fat dogs to do this.

Raju noticed that 2 of the dogs are fat. "You must have just 1 stubborn dog

here,” said quick thinking Rashmi.

“No,” said Krishna Uncle, “as it happens, 3 of these dogs are stubborn.”

How could that be? (The 2 fat dogs are also stubborn)

Level 3 Approximation

How Close Is Close Enough?

Rashmi always likes to figure everything out exactly, but Raju doesn’t mind using numbers that are close enough.

“My way is better,” said Raju, “because I get my answers quicker, and they are close enough. Besides, you sometimes make mistakes, and I never do.”

Whose way do you think is better: Rashmi’s way of always figuring things out exactly or Raju’s way of using numbers that are close enough?

Raju and Rashmi decided to keep track for a whole day and see whose way worked better. It was Saturday, and they had some shopping to do for their mother. They always went with their mother to do shopping; because their mother wanted them to learn about money she allowed them to figure things out for themselves while shopping. She told them to buy some lettuce, but not to spend more than Rs30/-. Lettuce cost Rs13.70 a head. They had to figure out how many heads of lettuce they could get without spending more than Rs30/-.

“Let’s see,” said Rashmi, “1370 paise and 1370 paise is I need a pencil for this one.”

“I already have the answer,” said Raju. “We can get 2 heads of lettuce and have a little less than Rs5/- left over.”

Is Raju right (Yes)

How could he have figured it out so quickly?

“How do you know?” Rashmi asked.

“Because,” he said, “Rs13.70 is almost Rs15/-, and 2 fifteens make 30, so we can buy only 2 heads of lettuce for Rs30/-. There will be a little less than Rs5/- left over, but that’s not enough for another head of lettuce.”

“Your way worked better that time,” said Rashmi, “but you were just lucky that Rs13.70 is close to Rs15/-. I didn’t notice that.”

Next their mother wanted them to buy some little glasses for orange juice. “We need 3 glasses,” their mother said, “don’t spend more than Rs100/-.”

Raju and Rashmi found just the kind they wanted, made of blue glass. They cost Rs37/- each.

“Oh, dear, I hope 3 of these don’t cost more than Rs100/,” Rashmi said.

“Don’t bother working it all out,” said Raju. “We can’t buy the glasses. Three of

them cost more than Rs100/."

Can you think of a way that Raju could have figured out quickly that the glasses cost more than Rs100/?

"How can you be sure?" Rashmi asked.

"Easy," said Raju. "Rs37/ is almost Rs40/, which is 400 tens paise. Four hundred tens and four hundred tens and four hundred tens make 1200 tens. That's Rs120/, which is quite a bit more than Rs100/."

The children looked around some more. At last they found some other glasses that were almost as good, and they cost Rs29/ apiece.

"Let's buy these," said Raju.

"Not so fast," Rashmi said, getting out her pencil. "We need to figure out exactly how much 3 of them cost and make sure it isn't more than Rs100/."

While Rashmi was busy adding Rs29/ and Rs29/ and Rs29/, Raju went up to the check-out counter and paid for the glasses.

Will the 3 glasses cost more or less than Rs100/? Try to figure it out Raju's way.

Raju came back with the package of glasses just as Rashmi finished adding. "I knew I was right," he said. "I figured that 29 is almost 30. Thirty and thirty and thirty make 90, so the 3 glasses would cost less than Rs90/. The Value Added Tax was Rs10.10 but even with that I still got back Rs2/

"Wait a minute," said Rashmi. "I've figured out that the 3 glasses should cost Rs87/. With Rs10.10 tax that should be Rs97.10. You didn't get the right amount of change."

If Rashmi is right, how much change should Raju have got?

"97.10 from 100 is 2.90," Rashmi said. "You should have got Rs2.90 back, and you got only Rs2/."

"I guess you're right," said Raju. He went back to the check-out counter and the man there said, "Oh, yes, I made a mistake," and gave him a 50 paise coin, a twenty five paise coin and a tamarind candy because he couldn't give another fifteen paise.

Why couldn't he pay them back fifteen paise?

"See," said Rashmi, "that proves it's important to figure out exactly how much things cost, even if it is more work and takes longer."

"You haven't proved it to me," said Raju. "All that work for just 90 paise! Rs2/ was close enough."

Which one do you agree with, Raju or Rashmi? Why?

Problems

1. Raghu Uncle needed 1 more leg for the stool he was making. To find out what length it should be, he measured the other 3 legs. One was 34 centimeters long, one was 35 centimeters long, and the other was 37 centimeters long.

Can you tell how long the fourth leg should be? (34 centimeters, because the other three legs can be cut shorter.)

2. When Vivek went to Venkatesh Uncle's toy shop, Venkatesh Uncle said, "These dart boards cost Rs99/ each, "so 2 of them will cost Rs299/. But as a special offer I'll take Rs10/ off, so they'll cost you only Rs289/."

What's wrong with Venkatesh Uncle's offer? (The normal price of 2 dart boards is Rs198/, so with the offer the price should be Rs188/)

3. Maya had Rs10/. She spent most of it.

Could she have Rs6.50/ left? (No)

Why not? (If she has spent most of it then she should have less than Rs5/ left)

4. A group of children were looking at a book that cost Rs80/.

"Let's each chip in Rs10/ and buy the book together," said Akash.

"That wouldn't work," said Rashmi. "If each of us gave Rs10/, we'd still only have half of the Rs80/ we need."

How many children are in the group? (4)

5. Vivek made a rectangle out of 8 toothpicks. One side of the rectangle was 3 times as long as another.

How many toothpicks were on the long side of the rectangle? (3)

6. Rashmi wrote a story that was 4 pages long. She wrote on both sides of the paper.

How many sheets of paper did the story cover? (2)

Another time she wrote a story that was 5 pages long.

How many sheets of paper did she need for it, if she used both sides? ($2\frac{1}{2}$)

7. "I wish I had 3 more marbles," said Akash. "Then I'd have as many as Maya." Maya has 38 marbles.

How many marbles does Akash have? (35)

8. "I wish I had 2 more rupees," said Akash. "Then I'd have enough money to buy 2 balloons." Balloons cost Rs3/ each.

How much money does Akash have? (Rs4/)

9. "I wish my little sister was 2 years older," said Akash. "Then she'd be as old as I am." Akash is 8 years old.

How old is his little sister? (6 years)

10. Rashmi said, "I wonder how far I will travel if I ride on this bus for an hour while it is going 35 kilometers an hour and then ride it for another hour while it is going 40 kilometers an hour."

How far will Rashmi travel? (75 kilometers)

If the bus goes only half as fast on the way back how long will the trip back take? (4hours)

How can you tell? (If the bus travels only half as fast then it will take twice as long to cover the same distance.)

Level 3 Division

A Sticky Problem

"Have you finished your model boat yet?" Rashmi asked.

"No," said Maya. "I've run into a problem. I have to cut this stick of wood into 5 equal pieces, and I don't know how to figure out how long they should be. We haven't learned that kind of thing yet at school."

"How long is the stick?" Vivek asked.

"I've never measured it," said Maya. "I didn't see how that would help."

How would measuring the stick help solve the problem?

Akash had a tape measure in his pocket, and with it he and Maya measured the stick of wood. It was 65 centimeters long. "That's no help," said Maya, "because I don't know how to divide 65 into 5 equal parts either."

While the children were walking along the pavement, thinking hard, they met Vinitha Aunty. "Are you having a problem?" she asked.

"A very hard problem," Raju said. "Maya has a stick 65 centimeters long, and we need to figure out how to divide it into 5 equal parts."

"My goodness, that is a hard problem," said Vinitha Aunty. "It's too bad the stick isn't 50 centimeters long isn't it?"

"Yes, it is," said Maya. "Then I would know exactly how long each of the 5 pieces should be."

How long would each of the pieces be if the stick were 50 centimetres long? (10)

"I know too," said Akash. "Each piece would be 10 centimeters long."

But my stick isn't 50 centimeters long," said Maya. "It's 65 centimeters, and I have to use all of it. If I made 5 pieces that were each 10 centimeters long, there would still be some left over."

"How much would be left over?" asked Vinitha Aunty.

Can you figure out the answer? (15 cm)

“There’d be 15 centimeters left over,” said Raju. “ $65 - 50$ is 15.”

“Ah, yes,” said Vinitha Aunty, “that’s quite a bit left over. I wonder what would happen if you tried to divide the leftover part into 5 equal pieces?”

How could you divide 15 centimeters into 5 equal parts?

“I know,” Rashmi said. “You’d get 5 pieces that are each 3 centimeters long. Is there any way to put those pieces together to get what we want?”

How could you put the pieces together to get the length Maya needs?

“You could use glue,” said Vivek. “You could take each of the 10-centimeter pieces and glue a 3-centimeter piece to one end of it. Then you’d have 5 pieces.”

“Would each piece be the same length?” Vinitha Aunty asked.

Would each piece be the same length? (Yes)

How do you know?

How long would each piece be?

“They’d all be the same length, which is what I want,” said Maya. “Each piece would be 13 centimeters long, and the whole stick would be used up. But it wouldn’t work. With so many parts glued together, the piece might be too weak.”

“That’s too bad,” said Vinitha Aunty. “I thought we had the problem solved. Is there any way we could do it without having to glue pieces of wood together?”

Can you think of a way?

“I have an idea,” said Rashmi. “We know that if we cut up the stick and then glue parts back together, we can get 5 sticks that are each 13 centimeters long, so why don’t we just cut 5 pieces that are 13 centimeters long in the first place? Then we won’t have to glue.”

“That sounds like a fine idea,” said Vinitha Aunty. “I wish I’d thought of it, but you children are very good at solving problems by yourselves.”

The children thanked her anyway and hurried over to Maya’s house to try out Rashmi’s idea. On the stick they marked off pieces that were exactly 13 centimeters long. Then Maya used a sharp knife to cut where they had marked. When she finished she had 5 pieces that were each the same length, and nothing was left over.

“I wish Vinitha Aunty was still here,” said Maya, “because I have another problem.”

“She isn’t much help anyway,” said Raju. “She never knows the answers. She just asks questions.”

Is it true that Vinitha Aunty wasn’t much help?

Why do you think so?

“My new problem,” said Maya, “is that I have this other stick that is 60

centimeters long. I need to cut it up into 5 equal parts too.”

“That’s easy,” said Raju, “I can solve that one with my eyes closed.” He thought and thought, and finally he said, “I think I’ll open my eyes.” None of the others knew how to solve the problem either.

What is it they need to figure out? (How long each piece should be)

“It’s too bad the stick isn’t 50 centimeters long,” said Vivek. “Then I’d know how long each of the 5 pieces should be.”

How long would each piece be if the stick were 50 centimeters long? (10 cm)

“Everybody knows that,” said Raju. “The pieces would be 10 centimeters long, because 5 times 10 is 50. But that’s no help, because the stick is 60 centimeters long.”

How much would be left if Maya cut off 5 pieces that were each 10 centimeters long? (10 cm)

“We have 10 centimeters left to worry about,” said Akash. Then he thought of something. “Hey,” he said, “this problem is almost the same as the first problem we solved! I think I can work it out now!”

Can you? Work on it today by yourself or with your friends. Find out tomorrow if you got it right. Remember, the problem is how to divide a stick 60 centimeters long into 5 equal pieces. (Encourage the children to keep working on the problem during the day or at home. Suggest that they ask questions like the kind Vinitha Aunty asked. The next day, check answers and methods and work through the problem in the style of Vinitha Aunty)

If the piece was 50 centimeters, how long would each of the 5 small pieces be? (10 cm)

How much would be left of the long piece? (10 cm)

If you divided that into 5 equal pieces, how long would each piece be? (2 cm)

Now, how could you put the small pieces together to make just 5 the same length? (By joining each 10 cm piece with a 2 cm piece)

So, in the end, how long should each piece be? (12 cm)

Note: If work on this problem seemed productive, you may wish to assign another problem for the next day; for instance, how to divide a 72 cm stick into 6 equal pieces.

Problems

1. Krishna Uncle wanted to mail a letter. He had an envelope that was 24 centimeters long and 10 centimeters wide. The letter measured 22 centimeters on one side and 25 centimeters on the other side.

How many folds does Krishna Uncle have to make in the letter to make it fit in the envelope? (2)

2. Krishna Uncle had an envelope that was 15 centimeters long and 9 centimeters wide. He had square piece of paper that was 16 centimeters on each side that he wanted to put in the envelope.

How many folds does Krishna Uncle have to put in the piece of paper to get it to fit in the envelope? (2)

3. Food World was selling a dozen glasses at one – fifth off the regular price because 6 of the glasses were broken.

Is this a very good bargain? (No)

Why not? (Because half the glasses are broken, and Food World wants more than half the regular price)

4. “Here’s a magic trick,” said Maya. “This box is 40 centimeters on each side. My magic wand is 50 centimeters long, but I can lay it in the bottom of the box without bending it.”

How could she do that? (By laying it diagonally)

5. Akash had a rectangular piece of paper that was 20 centimeters long and 10 centimeters wide. Akash said, “If I folded this paper in half I’ll get 2 squares.”

Is he right? (Yes)

How could he do that? (By folding the paper into half along the length)

6. Rashmi had a full glass of water; she drank half of it, then she added half as much water as she had left in the glass.

Now how much water does she have? (Three fourths of a glass)

7. Raghu Uncle had 12 tooth picks. He made a square out of 4 of the toothpicks. Then he wanted to change the square to a rectangle that would be 4 times as long as it was wide.

Does Raghu Uncle have enough toothpicks to do this? (Yes)

How many toothpicks does he have to use to make a rectangle that is 4 times as long as it is wide? (10)

8. Akash had a piece of cardboard that was 1 meter long. “All I can tell by using this piece of cardboard,” Akash said, “is that this table is longer than 1 meter and shorter than 2 meters.”

How many centimeters long could the table be? (any length from 101 to 199 cm)

9. Akash needed 4 sheets of coarse sandpaper to smooth off a tabletop. Now he wants to smooth off a tabletop that is just like the first one except that it is only half as wide and half as long.

How much coarse sand paper will he need? (1 sheet)

10. Both Vardenahalli and Magadi are to the east of Bangalore. Magadi is 10 kilometers east of Vardenahalli and Vardenahalli is 40 kilometers east of Bangalore.

Which 2 places are farthest apart? (Bangalore and Magadi)

How far apart are they? (50 kilometers)

Which 2 places are closest together? (Vardenahalli and Magadi)

How far apart are they? (10 kilometers)

Level 4

The Town of Kanaku: Part 1

On their way to the temple town of Madurai, Raju, Rashmi, Maya and Vivek suddenly stopped when they saw lush fields amongst huge rocks with a little town nestled in it. They were lured by the beauty of the place and wanted to explore. As they walked to the town, they saw a woman and a girl working in the fields.

“Hello, and welcome to Kanaku,” said the woman.

“Thank you,” said Rashmi. “How far is it to the nearest rock which has caves?”

“The nearest rock which has caves is about 10 kilometers from here,” said the girl. “That’s right,” said the woman. “It’s 43 kilometers from here.”

“Wait a minute,” said Vivek. “Something is wrong here.” Just then he saw an old man walking towards them. Vivek asked him, “Who is telling the truth about how far the nearest rock which has caves is?”

“They both are,” said the old man. “The nearest rock with caves is exactly 76 kilometers from here.” When he saw how puzzled the children were. The old man smiled.

“I guess you don’t know how we do things here in Kanaku,” he said. “We have a secret way of saying numbers. It protects us from spies. You children don’t look like spies. I’ll tell you the secret. Whenever we say a number we always add our age to it.”

“You mean,” Said Maya, “that if it was 2 o’clock, I’d say it was 11 o’clock, because I’m 9 years old?”

“That’s right,” said the old man, “I would say its 77 o’clock.”

1. If you wanted to find out if there were 2 schools in Kanaku, what number would you say instead?

2. If a 10 year old asked for 10 rupees, what would the child have to ask for?

3. An 8 year old in Kanaku says, “I have 12 people in my family.” How many people are really there?

4. How old is the old man?
5. How far is the nearest rock with caves?

The town of Kanaku: Part 2

Before going to explore the rocks, the children decided to get something to eat. They went into town to get something to eat. As they walked, they found a shop selling idlis.

“Give us 4 idlis,” Raju told the man.

“I’m not sure I can make so few idlis,” said the man.

“He’s right,” said Vivek. “One idli for each of us won’t be enough, let’s get three a person.”

“All right,” said Raju, “Please give us 12 idlis.”

“I think I know how many that is,” said the man. He gave them 4 idlis.

“Where are the others?” Raju asked.

“You ordered only 26, didn’t you?” the man said.

“I give up,” said Raju. “There’s no way you can get what you want over here.”

“Let me try,” said Maya. “You see how many idlis you have given us? Please give us that many again and then give us that many again.”

“I wish you children would make up your minds,” said the man. “Twenty-third you say 23 things and twenty-fourth you say something else!”

1. Why couldn’t the man give 4 idlis like Raju asked for?
2. How old was the man?
3. How would you say the last thing that the man said in our way, not the Kanaku way?
4. How old did the man think Raju was?

The town of Kanaku: Part 3

The four children came to a small school in the town and decided to visit it. Inside the school a mathematics class was going on. “Remember,” said the teacher, “Every triangle has 37 sides. What’s the rule Padma?”

“A triangle has 11 sides,” said a girl in the front row.

“That is correct. Now, how many sides does a square have?”

“A square has 13 sides,” said Padma.

“I’m afraid that is wrong,” said the teacher. “Nataraj, how many sides does a square have?”

“A square has 13 sides,” said Nataraj.

“That’s right,” said the teacher. “Now let’s welcome our 38 visitors.”

1. How could Padma be wrong when she said that a square has 13 sides and

Nataraj be right when he said the same thing?

2. What should Padma have said about the number of sides a square has?
3. How old is Padma?
4. How old is Nataraj?
5. How old is the teacher?
6. How old would Padma say Nataraj is and how old would Nataraj say Padma is? Why would they say the same number?

The town of Kanaku: Part 4

Raju, Rashmi, Maya and Vivek were finally ready to climb the rocks. Some of the children that they had met at the school had decided to go along with them. As they were walking, they saw some delicious jackfruit hanging from the tree. Raju's mouth watered at the thought of eating the sweet fruit. Just then, he saw a group of people who were cutting the fruit which they had just plucked from the tree.

Raju ran up to one man, "Will you give me some jackfruit?" he asked. "You need to pay for the jackfruit," said the man, "It will cost you Rs.46 for a piece."

"That's too much money" said Raju, "I can't pay that!"

"It's not too much," said an old man. "You should be happy to pay Rs.73 for such a fine fruit."

"That's right," said one of the boys who had come along with them. "Why, Rs.9 is not much, we all pay that."

"I can't figure out anything here", said Raju. "I want to leave."

"If you think things are bad here," said the man, "you should go to the little town, where they subtract their ages from all numbers!"

1. About how much does it really cost for a piece of jackfruit?
2. Could it cost Rs.1 a piece?
3. Could it cost more than Rs.10 a piece?

Level 5

Land: Part 1

"I wish we had a large farm so that I could ride horses," said Rashmi.

"We could have had one," said her mother, "if only your great-grandfather thought more about what he was doing. Many years ago he went out looking for free land. At one place they told him that he could have all the land he could walk around in a day. So he started just as the sun came up. He headed straight west as fast as he could go. At noon he turned around and headed straight back. He just made it to the starting point as the sun went down."

"Then he should have won a lot of land," said Raju. "Where is it?"

“You think the same way your great-grandfather did,” said his mother. “Now think a little harder. See if you can figure out what went wrong.”

“I think I know,” said Rashmi. “He should have walked in a crooked line both ways. Then he would have gotten a bigger piece of land.”

1. Draw a picture of the path that Rashmi and Raju’s great-grandfather followed.
2. How much land did he get?
3. What would their great-grandfather have won if he had used that path?
4. Draw some better paths that would have won more land.

Land: Part 2

“My grandfather tried to get some free land too,” said Parvathi Aunty. “He didn’t make the mistake of walking back and forth on the same line, but he made another mistake. He decided that he would walk south for half the day, and then east for 3 hours. Then he would walk straight to the starting point. He followed the plan exactly, but night came before he got to the starting point, so he didn’t get any land at all.”

“That is sad,” said Maya. “It was a good plan. If he had walked faster all day, it would have worked.”

1. Draw a picture showing the path that Parvathi aunty’s grandfather followed.
2. Suppose he walked faster, draw a picture of the path he would have followed then.
3. Why couldn’t his plan work, no matter how fast he walked? (Remember his plan and don’t change it!)
4. Suppose his plan worked. What shape is the piece of land he would have won?
5. How could he have changed his plan a little, so that it would have worked?

Land: Part 3

“Vivek’s great-grandfather had a chance for some free land, too,” said his mother. “He was very careful. He knew he had to make it back to the starting point by the time it became dark, otherwise he wouldn’t get anything. Maybe he was too careful.”

“How could he be too careful?” Vivek asked.

“Well, he started early in the morning and walked around in a little circle. He was back to the starting point in only ten minutes.”

“At least, he got some land!”

“Right,” said Vivek’s mother. “It was enough to park his horse-cart on. So he started off again in a bigger circle. This time it took him an hour to get back to the starting point.”

“That’s 2 pieces of land,” said Vivek.

“No, it was just 1,” said his mother. “But, he still had lots of time left so he walked another circle which took him 2 hours. Then he walked in a circle which took him 4 hours. He started on a still bigger circle, but night came before he made it back to the starting point.”

“So he didn’t get any land?” asked Maya.

“He got 4 pieces of land,” said Vivek.

“You’re both wrong,” said Vivek’s mother. “He got only 1 piece of land.”

1. How could Vivek’s great-grandfather walk in all those circles and still get only 1 piece of land?

2. Draw the picture of the path he followed.

3. Is there any way he could have gotten a different piece of land with each circle he walked around? Try to draw a path that would do this. (Remember, the starting point must always be the same place.)

Land: Part 4

My grandfather seems to have done better at getting free land,” said Krishna Uncle. “He planned everything just right. First he found out that he could walk only 48 kilometers in a day. Then he drew a map and followed it. He walked straight west for 23 kilometers. Then he walked south – I forget how far. Then he walked east. Then he walked straight north, back to the starting place. He got there just as the sun went down. He won a nice piece of land in the shape of a rectangle. I don’t know how large it was. I do remember, though, that he said he walked exactly 48 kilometers.”

Draw a picture of the land that Krishna uncle’s grandfather won. Put a number on each side to show how many kilometers long the side is.

1. How far is it around the land?

2. How many square kilometers is it?

3. How could he have gotten more land while still walking 48 kilometers?

Draw a picture to show how. Figure out how many square kilometers it would be.

4. Challenge: What is the most land he could have won by walking 48 kilometers? (he could have walked in any shape)

Circle Time

Suseela Kumaravel

A circle is the best shape that people can gather at as it allows for eye contact with everyone around. People come together in circles to discuss matters, to eat, to sing or to dance. In the circle time that we have, children and I get together to sing songs and recite poems with movement or gestures and to do story telling.

Every teacher in any part of the world, teaching in the pre-primary or primary sections without a shadow of doubt knows that songs, poems, movement, finger play and stories are enjoyed tremendously by children because these are very close to their hearts. I have no hesitation in adding that songs, stories and poems nourish their souls in ways that we cannot fathom. One visible effect that these have on the children is calming them down. In fact the only time children can become completely quiet and still is when they listen to a story that engages them completely. While doing craft of any kind children are often calm but seldom do I find them just working with their hands; they are busy chattering as well.

Children need to build up a vocabulary of a language through listening and speaking before they begin to read and write. It happens in a natural sort of way with the mother tongue. What better way than singing, reciting and listening to stories is there to learn a new language? Even when a child knows to speak a language stories, songs and poems help enhance their vocabulary.

In order to sing and recite with gestures the teacher needs to shed his/her inhibitions; for instance be able to leap like a frog or scamper like a rabbit with the children. We cannot do this unless there is joy in doing it. One doesn't have to be a great singer (I am not one, but I enjoy singing and listening to music). Simple tunes that are easy and repetitive can be chosen. I must add here that most of the repertoire that I have are not the usual nursery rhymes but quite unusual and many are related to nature and the seasons.

It is indeed fun to do circle time because it is one of those rare opportunities when a teacher can easily shed the didactic mode and switch over to a participatory mode. I definitely find it so. I don't ask the children to repeat after me, they do it with me.

Now coming to the actual circle time I do two sessions a week. I try and have a theme that coincides with what's happening in nature (it could be wind, rain, gardening etc) which I do for a month or so. There would be some poems and songs which are not connected to the theme, sometimes just to make it long enough

and at other times to make sure that there is a balance between poems that can be said loudly and those that need to be recited in a whisper (children love this variation and respond beautifully to variations of this nature as they do for speeding up and slowing down also). Talking about themes I am sure you would agree that what we did just now could fall under 'All Kinds of Legs and Walking'! You would have realized that some are done standing and some while sitting down. I like those poems that we do which help us stand or sit without the children being given instructions. One might say that we allow the poems to instruct us.

Once we have finished with all the jumping about we settle down to story telling. The story is often chosen to go with the theme and is initially told by me in parts. In the subsequent sessions the children recall the story; I make sure through gentle prodding that they incorporate the new words learnt. When they really know the story well they either illustrate a part of the story in their picture story book or act it out during circle time itself or use puppets to tell the story. (Puppets are sometimes made by them and sometimes by me). All the new nouns they learn are entered in their 'pictionary' with pictures and sentences. They also are encouraged to maintain their own word bank.

Over the years many other possibilities have been discovered. I have noticed that they are extremely alert after circle time so I happily capitalize on it and do a quick math and spelling revision. Teaching spelling and grammar through these poems and stories are being under taken.

The following three songs were composed by two students when they had moved out of Junior School; they shared these with us during circle time. Currently they are doing level 7 in CFL.

Beware

You are beautiful
Little flowers
Beware of
Walking people

You have a
Smell that's wonderful
Your petals
Are delicate.
Flowers! Beware of walking people

The Rain is Pouring

The rain is pouring (3)
The rain is pouring right now

The wind is blowing (3)
The wind is blowing right now

The clouds are moving (3)
The clouds are moving right now

The sun is glowing (3)
The sun is glowing right now

I am smiling (3)
I am smiling right now.

Nature Journal

Suseela Kumaravel

Being with nature is wonderful indeed for me. How can I convey this feeling to the children under my care? A child growing up in an urban environment often has very little contact with nature and can get lost in ways of consumerism, television, computer games or cell phone games. People who founded Centre for Learning along with those who joined them in the early years have created this haven where nature manifests itself in its utmost splendour. This rocky land terrain with its tree clusters, the many birds, all kinds of insects and wild flowering plants is indeed a treat to one's senses. We have realized that just making this space available to the children is not enough. Conscious efforts are needed to get the children in touch with that sense of contact with nature. This contact we feel is absolutely necessary for human beings to grow up with humane qualities. Fortunately the young children respond very well to these efforts of ours which shows that all is not lost.

If you have no relationship with nature you have no relationship with man. Nature is the meadows, the groves, the rivers, all the marvelous earth, the trees and the beauty of the earth. If we have no relationship with that, we shall have no relationship with each other.

J Krishnamurti

Through these words J Krishnamurti has poignantly conveyed the importance of a relationship between mankind and nature. I find that these words ring true and are very penetrating.

We at CFL are very fortunate to have this twenty two acre piece of land where nature can carry on its marvelous work largely uninterrupted and with minimum interference from mankind. So, we get to experience a range of colours in nature: the different greens of new leaves in spring, the array of all hues of bright colours in the wildflowers, the iridescent colours in butterflies birds and insects and the changing colours of a veiled chameleon. The spectacular sunsets and sunrises, colours of the rainbow, the water droplets shining like jewels on grass blade tips in the early mornings, the changing patterns of clouds in the sky looked at by lying flat on the rocks, a dry leaf floating down to the earth by a gentle breeze, a snake devouring a frog, a slender loris moving up a tree, munias tirelessly flying back and forth with one blade of grass in their beaks at a time to build their nests and many more such wonderful experiences await us each day.

The myriad ways in which the outer world can manifest itself are a special treat

to our senses. The fragrance of the Indian Cork tree flowers, the wonderful smell of the first rain on earth and many other rich aromas of nature are experienced with our sense of smell. The wind whistling its way through, the dry leaves rustled by a mongoose, babblers or a crow pheasant, the slender loris calling to each other in the night, the sound of children playing or a child crying, all these tell us what an intricate web nature is. Walking on the ground covered by leaves after the rains, working through the soil in the garden with our hands, feeling the texture of new leaves, soft petals of the wild flowers, or the rocks and stones are all indeed joyous experiences made possible because of our senses. If we are to allow our senses to respond to the varied stimuli offered by the natural world then we need to take time off from our busy schedules and in doing it we would find a great sense of contentment.

K T Margaret in her book “The Open Classroom” says:

The function of education is to correlate the inner self of the child with the outer world. Children should be given the time and space for their senses to experience and appreciate the outer world, so that their imagination is stimulated. They should be helped to use their sensory experiences to nourish their minds and hearts. Only then does education truly take place.

I completely resonate with her words. Walks and treks, making entries into a nature journal, having a nature table with all the natural treasures collected by children and nature related projects are all activities that provide children the space to get in touch with nature. When all the sensory stimuli can be accessed in nature I find that artificially contrived sensorial experiences are not necessary to keep the senses alive. What better way is there to stimulate the sense of hearing than listening to the bird calls and learning to identify birds without even seeing them? Nature is a patient, wonderful educator; all we need is the time to be with it.

Now coming to maintaining a nature journal – it seems the right kind of activity for the very young. Despite growing up in a city with all its distractions, they seem to have a fascination for the natural world – both the flora and the fauna. Often I find a child absorbed in observing a lizard, a spider, a butterfly, a bird, a wild flower or an ant. Thus in this activity they do what they naturally enjoy, i.e. observe, but of course while observing they make a record of their observations through a sketch and writing. While occupied in this manner their senses are alive and they calm down completely. Obviously questions follow their observations. They find the answers to their questions and in this manner make sense

of the world around them. In short they learn about all the creatures and the plants and the trees that they share their environment with. It's amazing how they capture the form of what they observe so well.

Usually, we go out to observe but occasionally opportunities come knocking at our door. Once a leaf insect came into the Junior School, and settled down very comfortably so we merrily abandoned everything else to observe, draw and write about it. After all it came to be with us and its visit had to be honoured. On the occasions when we found that a wolf snake was sharing our room we were not bold enough even after knowing its non poisonous nature, I wonder why now.

This is an activity that the teacher can do with the children, the children really get more involved when this happens and it is an enriching process for the teacher and the children. If as teachers, we read essays, stories and poems on nature, we would be able to assist and guide their work better. Hopefully, the relationship with nature thus formulated will help them do something as they become adults to protect their environment.

Some writings and pictures from the children's Journals

Rock Lizards

We saw four lizards. There were two adults and two babies. One baby was limping and one was the size of a peanut. The lizards had four legs and five fingers each. The lizards were black and orange in colour. The lizard's tail was long and curled up. Their eyes were small. One of the lizards was popping its head now and then. If anyone shouted it would run away. It would think she/he is going to harm it.

Student, 7 years

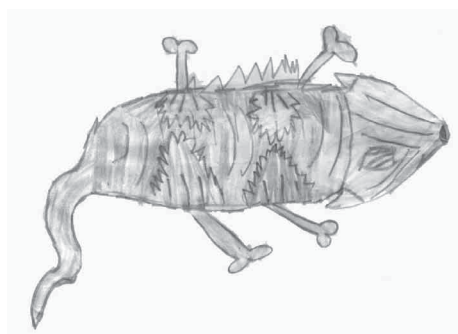
We were far from the lizards. There were three lizards. I don't know if it is a chameleon. The lizard was bright in colour. The tail was fat near the body and thin near the end and the head was big.

Student, 7 years



The lizard was on a granite slab. It had four legs and five fingers. It was black and red. It was changing colours. There were two baby lizards and two adult lizards. One baby lizard was limping. Nivedita shouted, "Shika! Shika!" and the lizard ran away. When it came back Nivedita, Shika, Abhin, Isbaan, Manini and I drew the lizard.

Student, 7 years



Leaf Insect

The leaf insect was like a leaf. It can get camouflaged in the neem leaf. And this is the first time that I saw a leaf insect. The leaf insect flew to the tiles on the thatch when Vimal uncle was teaching us foot ball. Before that we were in the Junior School and that time I saw the leaf insect. The leaf insect had small legs at the front and long legs at the back. The leaf insect was two inches long. Shreesha came close to the leaf insect and that is why it flew away.

Student 6 years

List of books

1. Teaching the trees Lessons from the Forest – Joan Maloof
2. The Song of the Mantis – Written and photographed by Peter Garland
3. Flower Fairies of the Summer – Cicely Mary Barker
4. Flower Fairies of the Trees – Cicely Mary Barker
5. Flower Fairies of the Winter – Cicely Mary Barker
6. Because of a Tree – Lorus J. Milne and Margery Milne
7. An Experiment in Education – Sybil Marshall
8. All the Marvelous Earth – J. Krishnamurti

The two poems included at the end here titled ‘When the Rain Kept Falling...’ and ‘Dragonfly’ were composed collectively by six to seven year-old children; each child made up a line.

When the Rain Kept Falling

When the rain kept falling, drip drop, drip drop,
Savandurga vanished from our view.

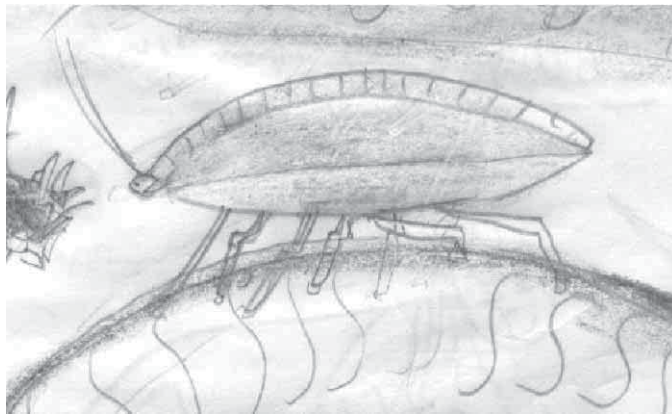
When the rain kept falling, drip drop, drip drop,
All the trees were swaying to and fro.

When the rain kept falling, drip drop, drip drop,

The grass and the shrubs and the mud got very wet.
When the rain kept falling, drip drop, drip drop,
We didn't get wet at all.
Would you like to know how?
We were sheltered in the temple.

Dragonfly

Dragonfly looks as if it is dancing
Rain comes and it hides
Amazing eyesight the dragonfly has
Gliding through the air like a helicopter
On a warm day it comes out
No one can see a dragonfly when it rains
Flitting after the flies and mosquitoes
Late in the evening it is still out
Yellowish orange it looks against the sun.



ಭಾಷಾ ಕಲಿಕೆ - ಕನ್ನಡ ಕಾರ್ಯಾಗಾರ

ಲೀಲಾ ಗರಡಿ ಮತ್ತು ಕಾವ್ಯ ಬಿರಾದಾರ

ಕನ್ನಡ ಕಲಿಕೆ

ಹೃದಯದ ಶ್ರೀಮಂತಿಕೆಯನ್ನು ಬೆಳೆಸುವುದೇ ನಿಜವಾದ ಶಿಕ್ಷಣ. ಇದು ಯಾವ ಭಾಷಾಮಾಧ್ಯಮದಿಂದಾದರೂ ಆಗಲು ಸಾಧ್ಯ. ಆದರೆ ಆ ಭಾಷೆ, ಕಲಿಯುವ ವ್ಯಕ್ತಿಯ ನೆಲದ ಭಾಷೆಯಾಗಿದ್ದಾಗ ಆತ ಸಮಾಜದೊಂದಿಗೆ ಬೆರೆಯಲು ಸಹಾಯಕವಾಗುತ್ತದೆ. ವ್ಯಕ್ತಿಯು ಒಂಟಿಯಾಗಿ ಬೆಳೆಯಲಾರ. ತಾನು ಬಾಳುವ ನೆಲ, ಸಮಾಜ, ಅದರ ಸಂಸ್ಕೃತಿ, ಅದರೊಂದಿಗೆ ತನ್ನ ಸಂಬಂಧ, ಅದರಿಂದ ತಾನು ಪಡೆದುದೇನು, ಆ ಸಂಸ್ಕೃತಿಯ ಆಧಾರ ಯಾವುದು, ಅದರ ಕುಂದುಕೊರತೆಗಳೇನು ಇತ್ಯಾದಿ ವಿಷಯಗಳನ್ನು ಅರಿತುಕೊಂಡರೆ ಉತ್ತಮವಾಗಿ ಬೆಳೆಯಲು ಸಾಧ್ಯ. ಒಂದು ಸಂಸ್ಕೃತಿಯ ಆಳವಾದ ತಿಳುವಳಿಕೆಯು ವ್ಯಕ್ತಿಯ ಹೃದಯದವನ್ನು ಶ್ರೀಮಂತಗೊಳಿಸಿ ಇಡೀ ಮಾನವ ಜನಾಂಗವನ್ನೇ ಅರಿಯಲು ಅನುವು ಮಾಡಿಕೊಡುತ್ತದೆ.

ಆಯಾ ನೆಲದ ಭಾಷೆ, ಅಲ್ಲಿಯ ಸಂಸ್ಕೃತಿಯನ್ನು ಬಿಂಬಿಸುತ್ತದೆ. ಒಂದು ಭಾಷೆಯನ್ನು ಸಾರ್ಥಕವಾಗಿ ಕಲಿಯಬೇಕಾದರೆ ಆ ಭಾಷೆಯನ್ನಾಡುವ ಜನರು ಬಾಳುತ್ತಿರುವ ಪರಿಸರದಲ್ಲಿ ವ್ಯವಹರಿಸಿ, ಕಲಿಯಬೇಕಾದದ್ದು ಸೂಕ್ತವೂ ಹೌದು, ಮತ್ತು ತನ್ನ ಸುತ್ತ ಮುತ್ತ ಜೀವಂತವಾಗಿರುವ ಭಾಷೆಯನ್ನು ಕಲಿಯುವುದು ಸುಲಭವೂ ಹೌದು. ಈ ಎಲ್ಲ ಕಾರಣಗಳು, ಕರ್ನಾಟಕದಲ್ಲಿ ಕನ್ನಡ ಕಲಿಯುವುದಕ್ಕೆ ಮಹತ್ವ ನೀಡುತ್ತವೆ. ಕನ್ನಡ ಭಾಷೆಗೆ ಎರಡು ಸಾವಿರ ವರ್ಷಗಳಿಗಿಂತಲೂ ಹೆಚ್ಚಿನ ಇತಿಹಾಸವಿದೆ. ಈ ಭಾಷೆ ಕನ್ನಡ ಜನಸಮುದಾಯದ ಜೀವನದ ರೀತಿ ನೀತಿ, ನೋವು ನಲಿವು, ನಂಬಿಕೆ ಶ್ರದ್ಧೆ, ಪ್ರಕೃತಿಯ ಜ್ಞಾನ, ಜೀವನ ದರ್ಶನ, ಕಲೆ ಇತ್ಯಾದಿಗಳನ್ನೆಲ್ಲ ತನ್ನಲ್ಲಿ ಗರ್ಭೀಕರಿಸಿಕೊಂಡಿದೆ. ಕನ್ನಡ ಭಾಷೆಯನ್ನು ಕಲಿಯುವುದು ಅಥವಾ ಅದರ ಸಂಸ್ಕೃತಿಯನ್ನು ಅರಿಯುವುದು ಎಂದರೆ ಇದನ್ನೆಲ್ಲ ಪ್ರತ್ಯಕ್ಷವಾಗಿಯೇ ಇಲ್ಲವೆ ಪರೋಕ್ಷವಾಗಿಯೇ ತಿಳಿದುಕೊಳ್ಳುವುದು ಎಂದಾಗುತ್ತದೆ.

ಆದರೆ ಈಗೀಗ ಕನ್ನಡ ಕಲಿಸಬೇಕಾದರೆ ಅನೇಕ ತೊಡಕುಗಳನ್ನು ಎದುರಿಸಬೇಕಾಗುತ್ತದೆ. ಏಕೆಂದರೆ ಮಕ್ಕಳು ಬೇರೆ ಬೇರೆ ಹಿನ್ನೆಲೆಗಳಿಂದ ಶಾಲೆಗೆ ಬರುತ್ತಾರೆ. ಅನೇಕ ಮಕ್ಕಳ ಮಾತೃ ಭಾಷೆ ಕನ್ನಡವಾಗಿರುವುದಿಲ್ಲ, ಅಥವಾ ಅದು ಕನ್ನಡವಾಗಿದ್ದರೂ ಮನೆ ಮಾತು ಇಂಗ್ಲೀಷೇ ಆಗಿರುತ್ತದೆ. ಇಲ್ಲವೆ ಅವರುಗಳ ಮನೆಯಲ್ಲಿ ಮಾತಾಡುವ ಕನ್ನಡದಲ್ಲಿ ಕೇವಲ ಸರ್ವನಾಮಗಳು ಮತ್ತು ಕ್ರಿಯಾಪದಗಳನ್ನು ಬಿಟ್ಟರೆ ಉಳಿದೆಲ್ಲವೂ ಇಂಗ್ಲೀಷಾಗಿರುತ್ತದೆ ಅಥವಾ ಪ್ರಾಂತೀಯ ಆಡು ಭಾಷೆಯಾಗಿರುತ್ತದೆ. ಇಂತಹ ಸಂದರ್ಭದಲ್ಲಿ ಕನ್ನಡ ಕಲಿಸುವುದು ಒಂದು ದೊಡ್ಡ ಸವಾಲಾಗಿ ಪರಿಣಮಿಸುತ್ತದೆ. ಕನ್ನಡ ಭಾಷೆಯನ್ನು ಕೇಳಿ ಮತ್ತು ಬಳಸಿ ಅಭ್ಯಾಸವಿಲ್ಲದ ಮಕ್ಕಳಿಗೆ ಅದು ಒಂದು ಹೊಸ ಭಾಷೆಯಾಗಿ, ಅದರ ವರ್ಣಮಾಲೆಯ ಹ್ರಸ್ವ, ದೀರ್ಘ, ಅಲ್ಪಪ್ರಾಣ, ಮಹಾಪ್ರಾಣ ಧ್ವನಿಗಳ ವ್ಯತ್ಯಾಸಗಳು ಗೊಂದಲವನ್ನುಂಟು ಮಾಡುತ್ತವೆ. ಅನೇಕ ವೇಳೆ ಅವರು ಕನ್ನಡದ ಪದಗಳನ್ನು ತಮ್ಮದೇ ಆದ ಧಾಟಿಯಲ್ಲಿ ಉಚ್ಚರಿಸುತ್ತಾರೆ. 'ಳ' ಕಾರಕ್ಕೆ ಬದಲಾಗಿ 'ಲ' ಕಾರವನ್ನು, 'ಊ' ಗೆ ಬದಲಾಗಿ 'ಹೂ' ವನ್ನು ಉಚ್ಚರಿಸಿದಾಗ ಉಂಟಾಗುವ ಆಭಾಸವನ್ನು ಇಲ್ಲಿ ಉಲ್ಲೇಖಿಸುವ ಅವಶ್ಯಕತೆ ಇಲ್ಲ. ವರ್ಣಮಾಲೆ, ಕಾಗುಣಿತ ಮತ್ತು ಒತ್ತಕ್ಷರಗಳನ್ನು ಪೂರ್ತಿಯಾಗಿ ಕಲಿಯಲು ಬಹಳ ಸಮಯ ಹಿಡಿಯುತ್ತದೆ. ಅಲ್ಲಿಯವರೆಗೆ ಅವರು ಏನನ್ನೂ ಓದಲಾರರು.

ಇದರಿಂದ ಮಕ್ಕಳಿಗೆ ಬೇಸರ ಉಂಟಾಗುತ್ತದೆ. ಕನ್ನಡದಲ್ಲಿ ಮೂರು ನಾಲ್ಕು ಪದಗಳು ಒಟ್ಟುಗೂಡಿ ಒಂದು ಪದವಾಗುವುದು ಸರ್ವೇಸಾಮಾನ್ಯ. ಇವುಗಳನ್ನು ಓದುವುದು ಒಂದು ಬಹು ದೊಡ್ಡ ತೊಡಕಾಗುತ್ತದೆ. ಅಡು ಭಾಷೆ ಮತ್ತು ಬರವಣಿಗೆಯ ಭಾಷೆಯಲ್ಲಿರುವ ವ್ಯತ್ಯಾಸ ಕೂಡ ಮಕ್ಕಳನ್ನು ಗೊಂದಲಕ್ಕೀಡುಮಾಡುತ್ತದೆ. ಇಂಗ್ಲೀಷಿನಲ್ಲಿ ಮಕ್ಕಳು ಬಹು ಬೇಗ ಓದಬಲ್ಲರು. ಏಕೆಂದರೆ ಅಲ್ಲಿ ಎಲ್ಲ ಮಟ್ಟದಲ್ಲೂ ಆಕರ್ಷಕವಾದ ಅನೇಕ ಪುಸ್ತಕಗಳು ಬಹು ಸುಲಭವಾಗಿ ದೊರೆಯುತ್ತವೆ. ಆದರೆ ಕನ್ನಡದಲ್ಲಿ ಆ ರೀತಿಯ ಪುಸ್ತಕಗಳು ಇಲ್ಲ. ನಮ್ಮಲ್ಲಿ ಮಕ್ಕಳಿಗಾಗಿ ಸಿಗುವ ಪುಸ್ತಕದ ಭಾಷೆ ಕಠಿಣವಾಗಿರುತ್ತದೆ. ಸಂಸ್ಕೃತಿ ಬದಲಾಗಿರುವುದರಿಂದ ಪರಂಪರಾಗತ ಕತೆಗಳನ್ನು ಎಲ್ಲ ಮಕ್ಕಳು ಅರ್ಥ ಮಾಡಿಕೊಳ್ಳುವುದು ಕಷ್ಟ. ಇಂದಿನ ಸಂಸ್ಕೃತಿಗೆ ತಕ್ಕಂತಹ ಕತೆಗಳನ್ನು ಬರೆದಾಗ ಹೆಚ್ಚಿನ ಆಂಗ್ಲ ಪದಗಳ ಬಳಕೆಯಾಗುತ್ತದೆ. ಅವುಗಳನ್ನು ಕನ್ನಡದಲ್ಲಿ ಓದುವುದು ಕಷ್ಟಕರವಾಗುತ್ತದೆ. ಮಕ್ಕಳು ಕನ್ನಡ ಕಲಿಕೆಯಲ್ಲಿ ಆಸಕ್ತಿಯನ್ನು ಕಳೆದುಕೊಳ್ಳುವುದಕ್ಕೆ ಈ ಎಲ್ಲ ವಿಷಯಗಳು ಕಾರಣವಾಗುತ್ತವೆ. ಸಮಾಜದಲ್ಲಿಯೂ ಕನ್ನಡದ ಬಳಕೆ ದಿನೇ ದಿನೇ ಕಡಿಮೆಯಾಗುತ್ತಿರುವುದರಿಂದ ಮಕ್ಕಳು ಕನ್ನಡದ ಬಗ್ಗೆ ಅಸಡ್ಡೆ ತೋರಿದರೂ ಆಶ್ಚರ್ಯವಿಲ್ಲ. ಹೀಗೆಂದು ಯಾರೂ ಕೈಚೆಲ್ಲಿ ಕುಳಿತಿರಬೇಕಾಗಿಲ್ಲ. ಸಮಸ್ಯೆ ಇದ್ದಲ್ಲಿ ಪರಿಹಾರವೂ ಇದ್ದೇ ಇರುತ್ತದೆ. ಈ ಎಲ್ಲ ವಿಷಯಗಳನ್ನು ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು ನಾವು ಕನ್ನಡ ಕಲಿಸುವ ವಿಧಾನವನ್ನು ಪರಿಸ್ಥಿತಿಗೆ ತಕ್ಕಂತೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕಾಗುತ್ತದೆ.

ಕಲಿಕೆ ಮುಖ್ಯವಾಗಿ - ಕಲಿಯುವವ, ಕಲಿಸುವವ ಮತ್ತು ಕಲಿಯತಕ್ಕ ವಿಷಯ, ಇವು ಮೂರನ್ನು ಒಳಗೊಂಡಿರುತ್ತದೆ. ಈಗ ನಾವು ಸಂಪೂರ್ಣವಾಗಿ ಕಡೆಗಣಿಸಿದರೂ, ಮತ್ತು ನಮಗೆ ಅಮುಖ್ಯವಾಗಿ ತೋರಿದರೂ, ಅಷ್ಟೇ ಮುಖ್ಯವಾಗಿರುವ ಇನ್ನೆರಡು ವಿಷಯಗಳೂ ಇವೆ. ಅವು- ಮನೆಯ ಪರಿಸರ, ಅಂದರೆ, ಪೋಷಕರ ದೃಷ್ಟಿ ಮತ್ತು ಸಮಾಜ. ಈ ಎಲ್ಲವುಗಳಲ್ಲಿ ಒಳ್ಳೆಯ ಹೊಂದಾಣಿಕೆ ಇದ್ದಲ್ಲಿ ಮಾತ್ರ ಕಲಿಕೆ ಸಾರ್ಥಕವಾಗುತ್ತದೆ. ಈ ಮಾತು ಭಾಷಾಕಲಿಕೆಯಲ್ಲಿ ಇನ್ನೂ ಹೆಚ್ಚಿನ ಮಹತ್ವ ಪಡೆಯುತ್ತದೆ. ಏಕೆಂದರೆ, ಇಂದು, ಕಂಪ್ಯೂಟರ್ ವಿಜ್ಞಾನ, ಇಂಗ್ಲೀಷು, ತಂತ್ರಜ್ಞಾನ ಮುಂತಾದವುಗಳು ಸಮಾಜದಲ್ಲಿ ಅತಿಯಾದ ಮಹತ್ವ ಪಡೆದಿವೆ. ಕನ್ನಡ ಯಾರಿಗೂ ಬೇಡದ ಭಾಷೆಯಾಗಿ ಉಳಿದಿದೆ. ಮೊಟ್ಟ ಮೊದಲು ದೊಡ್ಡವರಾದವರು ಈ ಭಾಷೆಯ ಮಹತ್ವವೇನು ಎಂಬುದನ್ನು ಚೆನ್ನಾಗಿ ಮನವರಿಕೆ ಮಾಡಿ ಕೊಳ್ಳಬೇಕು. ತನ್ನ ಮಗು ಕಂಪ್ಯೂಟರ್ ವಿಜ್ಞಾನ, ಇಂಗ್ಲೀಷು, ಗಣಿತಗಳನ್ನು ಕಲಿಯಲಿ ಎಂದು ಹಲವಾರು ಉಪಾಯಗಳನ್ನು ಮಾಡುವ ಪೋಷಕರು, ತಮ್ಮ ಭಾಷೆಯನ್ನು ಕಲಿಸಲು ಯಾವುದೇ ಸಕ್ರಿಯ ಪ್ರಯತ್ನವೇಕೆ ಮಾಡುತ್ತಿಲ್ಲ ಎಂದು ತಮ್ಮನ್ನು ತಾವೇ ಗಂಭೀರವಾಗಿ ಪ್ರಶ್ನಿಸುವ ಕಾಲ ಬಂದಿದೆ. ಅವರು, ಅದು ಮಾತ್ರ ಭಾಷೆಯಾಗಿರುವುದರಿಂದ ತಾನಾಗಿಯೇ ಬರುತ್ತದೆ ಎನ್ನುವ ತಪ್ಪು ತಿಳುವಳಿಕೆಯಲ್ಲಿರುವಂತಿದೆ. ಮಗುವಿನಲ್ಲಿ ಕಲಿಯಬೇಕೆಂಬ ಆಸಕ್ತಿ ಮತ್ತು ಕಲಿಯುವ ಸಾಮರ್ಥ್ಯ ಸ್ವಾಭಾವಿಕವಾಗಿಯೇ ಇರುತ್ತದೆ. ಈ ಸಹಜವಾದ ಗುಣವನ್ನು ಹಿರಿಯರೆಲ್ಲರೂ ಪೋಷಿಸಿಕೊಂಡು ಬರುವುದು ಮುಖ್ಯ. ಅಧ್ಯಾಪಕ ಮತ್ತು ವಿದ್ಯಾರ್ಥಿಯ ನಡುವೆ ಪ್ರೀತಿ ಮತ್ತು ವಿಶ್ವಾಸದ ಸಂಬಂಧವಿರಬೇಕೇ ಹೊರತು ಅಧಿಕಾರ ಮತ್ತು ವಿಧೇಯತೆಯದಲ್ಲ. ಹಿರಿಯರ ಆತ್ಮೀಯ ಸಂಬಂಧ ಮಕ್ಕಳಲ್ಲಿ ಆತ್ಮವಿಶ್ವಾಸ, ಉತ್ಸಾಹ, ಸ್ವಂತ ಬುದ್ಧಿ ಮತ್ತು ಪ್ರೀತಿಯನ್ನು ಬೆಳೆಸುತ್ತದೆ.

ಇನ್ನು ಕಲಿಯತಕ್ಕ ವಿಷಯ: ಅದು ಮಗುವಿನ ಮಾನಸಿಕ ಮಟ್ಟಕ್ಕೆ ಅನುಗುಣವಾಗಿದ್ದು

ಕುತೂಹಲಕಾರಿಯಾಗಿದ್ದು ಮಗುವಿನ ಬೆಳೆವಣಿಗೆಗೆ ಪೂರಕವಾಗಿರಬೇಕು. ಆ ವಿಷಯದಲ್ಲಿ ಮುಕ್ತ ಚರ್ಚೆಗೆ ಅವಕಾಶವಿರಬೇಕು. ಮಗು ಕಲಿಯುತ್ತಿರುವ ವಿಷಯದಲ್ಲಿ ಪೋಷಕರಿಗೆ ಆಸಕ್ತಿ ಇದ್ದು ಅದನ್ನು ಅವರು ಮಗುವಿನೊಂದಿಗೆ ಹಂಚಿಕೊಂಡರೆ, ಮತ್ತು ಸಮಾಜದಲ್ಲಿ ಅದು ಜೀವಂತವಾಗಿದ್ದರೆ ಮಗುವಿನ ಕಲಿಕೆ ಸಮೃದ್ಧವಾಗುವುದರಲ್ಲಿ ಅನುಮಾನವೇ ಇಲ್ಲ.

ಭಾಷೆ ಕೇವಲ ಪಠ್ಯ ಪುಸ್ತಕ ಮತ್ತು ತರಗತಿಗೆ ಸೀಮಿತವಾಗಿರಕೂಡದು. ಅದು ಜೀವಂತವಾಗಬೇಕಾದರೆ ಹಾಡುಗಳನ್ನು ಕಲಿಯಲು, ಕತೆಗಳನ್ನು ಕೇಳಲು, ಮಾತನಾಡಲು, ನಾಟಕಗಳನ್ನು ನೋಡಲು, ಆಡಲು, ಅಧ್ಯಾಪಕನು ತನಗೆ ಪ್ರಿಯವಾದ ಕತೆ, ಕವಿತೆ, ಹಾಡು, ಅನುಭವಗಳನ್ನು ಹಂಚಿಕೊಳ್ಳಲು ಅವಕಾಶಗಳನ್ನು ಕಲ್ಪಿಸುವುದು ಬಹಳ ಮುಖ್ಯ.

ಮೇಲೆ ವಿವರಿಸಿದ ಎಲ್ಲ ಅಂಶಗಳನ್ನು ಗಮನದಲ್ಲಿರಿಸಿಕೊಂಡು ನಮ್ಮ ಶಾಲೆಯ ಪಠ್ಯಕ್ರಮವನ್ನು ರೂಪಿಸುವ ಪ್ರಯತ್ನ ಮಾಡಲಾಗಿದೆ. ಅದರ ಸಂಕ್ಷಿಪ್ತ ಪರಿಚಯ ಈ ಕೆಳಗೆ ಕೊಡಲಾಗಿದೆ.

ಕನ್ನಡವು ಹೆಚ್ಚು ಹೆಚ್ಚಾಗಿ ಕಿವಿಯ ಮೇಲೆ ಬಿದ್ದು ಅದರ ಬಳಕೆಯಲ್ಲಿ ಸಹಾಯವಾಗಲಿ ಎಂಬ ಉದ್ದೇಶದಿಂದ ಸಂಭಾಷಣೆ, ಕತೆ, ಹಾಡು ಮತ್ತು ನಾಟಕಗಳ ಮೂಲಕ ಕನ್ನಡದ ಕಲಿಕೆ ಆರಂಭವಾಗುತ್ತದೆ. ಕನ್ನಡದ ಪದ್ಯಗಳನ್ನು ಸ್ಪಷ್ಟ ಉಚ್ಚಾರಣೆಯೊಂದಿಗೆ ಲಯಬದ್ಧವಾಗಿ ಹೇಳುವ ಅಭ್ಯಾಸ ಮಾಡಿಸಲಾಗುತ್ತದೆ. ವರ್ಣಮಾಲೆಯ ಬದಲಿಗೆ ಚಿತ್ರಗಳೊಂದಿಗೆ ಸುಲಭವಾದ ಪದಗಳ ಮೂಲಕ ಕನ್ನಡದ ಓದು ಬರಹ ಹೇಳಿಕೊಡಲಾಗುತ್ತದೆ. ಹೀಗೆ ಮಾಡುವುದರಿಂದ ಮಗು ಸಣ್ಣ ಸಣ್ಣ ವಾಕ್ಯಗಳನ್ನು ಓದಲು ಮತ್ತು ಬರೆಯಲು, ಕನ್ನಡದ ಎಲ್ಲ ಅಕ್ಷರ, ಕಾಗುಣಿತ ಮತ್ತು ಒತ್ತಕ್ಷರಗಳನ್ನು ಕಲಿಯುವವರೆಗೆ ಕಾಯಬೇಕಾಗಿಲ್ಲ. ಏಕೆಂದರೆ ಹೆಚ್ಚಾಗಿ ಬಳಸುವ ಪದಗಳನ್ನು, ಕಾಗುಣಿತ ಮತ್ತು ಒತ್ತಕ್ಷರಗಳನ್ನು ಮಾತ್ರ ಮೊದಲು ಹೇಳಿಕೊಡಲಾಗುತ್ತದೆ. ಸುಮಾರು ಇಪ್ಪತ್ತೊಂಬತ್ತು ಪಾಠಗಳನ್ನು (ಇವುಗಳನ್ನು ಪಾಠಗಳೆನ್ನುವುದಕ್ಕಿಂತ ವರ್ಕ್ ಶೀಟ್ ಎನ್ನುವುದೇ ಹೆಚ್ಚು ಸೂಕ್ತ. ಏಕೆಂದರೆ ಇಲ್ಲಿ ಕೇವಲ ಎರಡು ಅಥವಾ ಮೂರು ಚಿತ್ರಗಳು, ಪದಗಳು ಮತ್ತು ಅವುಗಳ ಬರೆಯುವ ಅಭ್ಯಾಸ, ಇಷ್ಟು ಮಾತ್ರ ಇವೆ.) ಕಲಿತ ಕೂಡಲೆ ಸಣ್ಣ ಸಣ್ಣ ವಾಕ್ಯಗಳಿರುವ ಚಿತ್ರಕಥೆಗಳನ್ನು ಓದಬಲ್ಲ ಸಂತಸ ಮಕ್ಕಳದಾಗುತ್ತದೆ. ಅವರಿಗೆ ಭಾಷೆಯ ಸಾಮಾನ್ಯ ತಿಳುವಳಿಕೆಯುಂಟಾಗಿರುತ್ತದೆ. ಅವರ ಕಲಿಕೆಯ ಮಟ್ಟಕ್ಕೆ ಅನುಗುಣವಾಗಿ ಪಠ್ಯವನ್ನು ಸೃಷ್ಟಿಸಿ ಕೊಡಲಾಗುತ್ತದೆ. ಪೂರಕವಾಗಿ ಇತರ ಪಠ್ಯ ಪುಸ್ತಕಗಳನ್ನೂ (ಓದುವ ಆಟ, ಕಲಿ ನಲಿ ಇತ್ಯಾದಿ) ಬಳಸಿಕೊಳ್ಳಲಾಗುತ್ತದೆ. ಕಲಿಕೆಯ ಪ್ರತಿ ಹಂತದಲ್ಲಿಯೂ ಸಂಭಾಷಣೆ, ಹಾಡು, ಕತೆ, ನಾಟಕಗಳು ಇದ್ದೇ ಇರುತ್ತವೆ.

ಒಂದು ಶೈಕ್ಷಣಿಕ ವರ್ಷದಲ್ಲಿ ಇಂತಿಷ್ಟು ಪಾಠಗಳನ್ನು ಮಾಡಿ ಮುಗಿಸಬೇಕೆನ್ನುವುದಕ್ಕಿಂತ ಇಂತಿಂತಹ ಕೌಶಲಗಳನ್ನು ಕಲಿಸಬೇಕೆಂಬ ಉದ್ದೇಶ ಹೊಂದುವುದು ಸೂಕ್ತ. ಒಂದು ಪಠ್ಯ ಪುಸ್ತಕದಲ್ಲಿ ಅನೇಕ ವಿಷಯಗಳ ಬಗ್ಗೆ ಬಿಡಿ ಬಿಡಿಯಾದ ಲೇಖನಗಳಿರುತ್ತವೆ. ಸಮಯದ ಅಭಾವದಿಂದ ಅವುಗಳ ಹಿಂದು ಮುಂದಿನ ಸಂದರ್ಭಗಳನ್ನು ತಿಳಿಸದೆ, ಜೀವನದಿಂದ ಪ್ರತ್ಯೇಕಗೊಳಿಸಿ, ಕೇವಲ ಒಂದು ಬಿಡಿಯಾದ ಪಾಠದಂತೆ ಹೇಳಿಕೊಟ್ಟಾಗ ಅದು ಮಗುವಿಗೆ ಅತ್ಯಂತ ನೀರಸವಾದ, ಯಾವ ಅರ್ಥವೂ ಕೊಡದ, ಆದರೆ ತಾನು ಮಾಡಿ ಮುಗಿಸಲೇ ಬೇಕಾದ ಕಠಿಣ ಕೆಲಸವಾಗುತ್ತದೆ. ಆದ್ದರಿಂದ ನಾವು ಈ ಪದ್ಧತಿಯನ್ನು

ಕೈಬಿಟ್ಟು, ಆಯಾ ಮಕ್ಕಳ ವಯಸ್ಸು, ಆಸಕ್ತಿ, ಸಾಮರ್ಥ್ಯ ಮತ್ತು ಸಂದರ್ಭವನ್ನು ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು ವಿಷಯಗಳನ್ನಾರಿಸಿ ಅವುಗಳಬಗ್ಗೆ ಪರಿಯೋಜನೆಗಳನ್ನು (ಪ್ರಾಜೆಕ್ಟ್) ಗಳನ್ನು ಮಾಡುವುದು ಔಚಿತ್ಯಪೂರ್ಣವಾದುದೆಂದರಿತು ಹಾಗೆ ಮಾಡುತ್ತಿದ್ದೇವೆ. ಇಲ್ಲಿ ಕೇಂದ್ರ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ, ಸಂದರ್ಭಕ್ಕೆ ತಕ್ಕಂತೆ, ಇತರ ಅನೇಕ ವಿಷಯಗಳನ್ನು ಅಳವಡಿಸಿ ಪರಿಯೋಜನೆಯನ್ನು ರೂಪಿಸಲಾಗುತ್ತದೆ. ಮಕ್ಕಳೇ ಸ್ವತಃ ಚರ್ಚಿಸಿ ಇಲ್ಲವೆ ಓದಿ ವಿಷಯಗಳನ್ನು ತಿಳಿದುಕೊಳ್ಳುವಂತೆ ಮಾಡಲಾಗುತ್ತದೆ. ಆದ್ದರಿಂದ ಇದು ಅವರಿಗೆ ಅರ್ಥಪೂರ್ಣವೆನಿಸುತ್ತದೆ. ಅಲ್ಲದೆ ಅವರಲ್ಲಿ ಉತ್ಸಾಹ ತುಂಬುತ್ತದೆ. ಪರಿಯೋಜನೆಯ ಪದ್ಧತಿಯಲ್ಲಿ ಅನೇಕ ಲಾಭಗಳಿವೆ. ಇಲ್ಲಿ ಚರ್ಚೆಗೆ ಹೆಚ್ಚು ಅವಕಾಶವಿರುವುದರಿಂದ ಬೇರೆ ಬೇರೆ ಮಟ್ಟದಲ್ಲಿರುವ ಮಕ್ಕಳಿಗೂ ಇದು ಬೇಸರ ಹುಟ್ಟಿಸುವುದಿಲ್ಲ. ಎಲ್ಲರಿಗೂ ಮಾತಾಡಲು ಅವಕಾಶ ಸಿಗುತ್ತದೆ. ಇದರಿಂದ ಮಗುವಿನ ಆತ್ಮವಿಶ್ವಾಸ ಬೆಳೆದು ತನ್ನನ್ನು ತಿದ್ದಿಕೊಳ್ಳುವ ಪ್ರಯತ್ನ ಮಾಡುತ್ತದೆ. ಒಂದು ತರಗತಿಯಲ್ಲಿ ಎಲ್ಲ ಮಕ್ಕಳ ಕಲಿಕಾಮಟ್ಟ ಒಂದೇ ಇರುವುದಿಲ್ಲ. ಎಲ್ಲರೂ ಒಂದೇ ಮಟ್ಟದಲ್ಲಿ ಕಲಿಯಬೇಕೆಂದು ನಿರೀಕ್ಷಿಸುವುದೂ ಸರಿಯಲ್ಲ. ಆದ್ದರಿಂದ ಪಠ್ಯವನ್ನು ಅವರವರ ಮಟ್ಟಕ್ಕೆ ತಕ್ಕಂತೆ ರೂಪಿಸಲು ಅವಕಾಶವಿರುತ್ತದೆ. ಇಂತಹ ಪರಿಯೋಜನೆಗಳ ಮುಖಾಂತರ ಕರ್ನಾಟಕದ ಇತಿಹಾಸ, ಸಂಸ್ಕೃತಿ, ಭೂಗೋಳ ಮತ್ತು ಅನೇಕ ಇತರ ವಿಷಯಗಳನ್ನು ಹೆಣೆಯುವಲ್ಲಿ ನಮಗೆ ಯಶಸ್ಸು ಸಿಕ್ಕಿದೆ ಎಂದು ಹೇಳಬಹುದು. ಅವುಗಳನ್ನು ಅರ್ಥಪೂರ್ಣಗೊಳಿಸಲು ಹಂಪಿ, ಹಳೇಬೀಡು, ಶ್ರವಣಬೆಳಗೊಳ ಮುಂತಾದ ಸ್ಥಳಗಳನ್ನು ಮಕ್ಕಳು ಸಂದರ್ಶಿಸಿದ್ದಾರೆ. ಇನ್ನೊಂದು ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟಂತೆ ಪಕ್ಕದ ವರದೇನ ಹಳ್ಳಿಗೂ ಹೋಗಿ ರೈತರನ್ನು, ಗೊಲ್ಲರನ್ನು ಸಂದರ್ಶಿಸಿ ಅನೇಕ ವಿಷಯಗಳನ್ನು ತಿಳಿದುಕೊಳ್ಳಲು ಅವಕಾಶಮಾಡಿಕೊಟ್ಟಿದೆ.

ಪರಿಯೋಜನೆಗಳ ಜೊತೆಗೆಯೇ ಪ್ರಸಿದ್ಧ ಬರಹಗಾರರ ಕತೆ, ಕವಿತೆ, ಗದ್ಯ ರಚನೆಗಳನ್ನೂ ಸಹ ಪರಿಚಯಿಸಲಾಗುತ್ತದೆ. ಇದರೊಂದಿಗೆ ಮಕ್ಕಳು, ಪ್ರತಿ ಹಂತದಲ್ಲಿಯೂ ಕಲಿಯಬೇಕಾದ ಸಾಮಾನ್ಯ ಭಾಷಾ ಕೌಶಲಗಳ ಕಲಿಕೆಯನ್ನು ಅಳವಡಿಸಲಾಗುತ್ತದೆ. ಆರು ವರ್ಷ ವಯಸ್ಸಿನಿಂದ ಹದಿಮೂರು ವರ್ಷ ವಯಸ್ಸಿನ ವರೆಗೂ ಮಕ್ಕಳಿಗೆ ಕನ್ನಡವನ್ನು ಕಡ್ಡಾಯವಾಗಿ ಹೇಳಿಕೊಡಲಾಗುತ್ತಿದೆ. ಒಟ್ಟಿನಲ್ಲಿ ಕನ್ನಡ ಕಲಿಕೆ ಹೆಚ್ಚು ಅರ್ಥಪೂರ್ಣವಾಗುವಂತೆ ಮಾಡಲು ನಮಗೆ ತಿಳಿದ ಎಲ್ಲ ಪ್ರಯತ್ನಗಳನ್ನು ನಮ್ಮ ಮಿತಿಯಲ್ಲಿ, ನಮ್ಮ ಸಾಮರ್ಥ್ಯಕ್ಕೆ ತಕ್ಕಂತೆ ಮಾಡುತ್ತಿದ್ದೇವೆ.

ಮಕ್ಕಳಿಗೆ ಪದ್ಯಗಳು

ಮಕ್ಕಳು ಹುಟ್ಟಿನಿಂದ ಹಾಡನ್ನು ಕೇಳಿ ಸವಿಯುವುದನ್ನು ನಾವು ಪ್ರಪಂಚದಾದ್ಯಂತ ನೋಡುತ್ತೇವೆ. ತಾಯಿ ಜೋಗುಳ ಹಾಡಿ ಮಲಗಿಸುವ ಸಂಪ್ರದಾಯ ಎಲ್ಲ ಜನಾಂಗದಲ್ಲೂ ಕಂಡು ಬರುತ್ತದೆ. ಜೋಗುಳದ ಅರ್ಥ ಮಗುವಿಗೆ ಆಯಿತೆ ಇಲ್ಲವೆ ಎನ್ನುವುದು ಮುಖ್ಯವಲ್ಲ. ಅದರ ಆಶಯ, ಪದಗಳ ಲಾಲಿತ್ಯ, ರಾಗ ಸಂಯೋಜನೆ, ಪ್ರಾಸಬದ್ಧ ಪದಗಳು, ಲಯ ಮತ್ತು ಹಾಡುವವರ ಆಶಯ ಇವುಗಳ ಅನುಭವ ಎಲ್ಲರಿಗೂ ಆಗುತ್ತದೆ. ಇದಕ್ಕಾಗಿ ಬುದ್ಧಿ ಬೆಳೆದವರೇ ಆಗಬೇಕು ಅಥವಾ ಭಾಷೆ ತಿಳಿದವರೇ ಆಗಬೇಕು ಎಂದೇನಿಲ್ಲ.

ಈ ಜೋಗುಳದ ಪದ್ಧತಿ ಇದ್ದರೂ ಅದು ಹೆಚ್ಚು ಕಾಲ ಮುಂದುವರಿಯುವುದಿಲ್ಲ. ಮುಂದೆ ಆ ಸ್ಥಳವನ್ನು ಟಿ.ವಿ., ರೇಡಿಯೋ, ಕಂಪ್ಯೂಟರ್ ಗಳು ಆವರಿಸಿಕೊಳ್ಳುತ್ತವೆ. ಈ ಮಾಧ್ಯಮಗಳಲ್ಲಿ ಬರುವ ಕಾರ್ಯಕ್ರಮಗಳ ಅರ್ಥ, ಆಶಯ, ಭಾಷೆ ಮತ್ತು ಅವುಗಳ ಪರಿಣಾಮ, ಎಳೆವಯಸ್ಸಿನ ಮಕ್ಕಳ ಮನಸ್ಸಿನ ಮೇಲೆ ಏನಾಗಬಹುದೆಂಬುದನ್ನು ನೀವೇ ಯೋಚಿಸಿ ನೋಡಿ.

ಹಿಂದೆ ನಮ್ಮ ಸಾಮಾಜಿಕ ಸಂಸ್ಕೃತಿಯಲ್ಲಿ ಜಾನಪದ ಹಾಡುಗಳು, ಪುರಾಣ ಪ್ರವಚನಗಳು, ಬಯಲಾಟಗಳು, ಯಕ್ಷಗಾನಗಳು ಇತ್ಯಾದಿ, ಹಾಸುಹೊಕ್ಕಾಗಿ ಸೇರಿಕೊಂಡಿದ್ದರಿಂದ, ಭಾಷೆಯ ಸೌಂದರ್ಯದ, ಲಯತಾಳಗಳ, ಗಂಭೀರ ವಿಷಯಗಳ ಮತ್ತು ಮೌಲ್ಯಗಳ ಪರಿಚಯ, ಪ್ರಾಸಪದಗಳ ಬಳಕೆ ನುಡಿಗಟ್ಟುಗಳ ಬಳಕೆ ಎಲ್ಲವೂ ಅನಾಯಾಸವಾಗಿ ನಡೆಯುತ್ತಿತ್ತು. ಈ ಎಲ್ಲವುಗಳ ಅಭಾವದ ಇಂದಿನ ಕಾಲದಲ್ಲಿ ನಾವು ಅವನ್ನು ಪರಿಚಯಿಸುವ ನಮ್ಮದೇ ಆದ ದಾರಿ ಕಂಡು ಕೊಳ್ಳಬೇಕಾಗಿದೆ. ಇಡೀ ಸಮಾಜ ಅದರ ಕಡೆಗೆ ಗಮನ ಹರಿಸಬೇಕಾಗಿದೆ. ಅದನ್ನು ತುಂಬಿಕೊಡುವ ಇನ್ನೊಂದು ಪದ್ಧತಿ ಅಥವಾ ಸಂಸ್ಕೃತಿಯನ್ನು ಬೆಳೆಸುವುದು ನಮ್ಮೆಲ್ಲರ ಆದ್ಯ ಕರ್ತವ್ಯ. ಅದು ಒಂದು ಬಹು ದೊಡ್ಡ ಸವಾಲು.

ಈ ನಿಟ್ಟಿನಲ್ಲಿ ನಾವು ನಮ್ಮದೇ ಆದ ಸಣ್ಣ ಪ್ರಯತ್ನ ಮಾಡುತ್ತಿದ್ದೇವೆ. ಹಾಡುಗಳು ಮಕ್ಕಳ ಜೀವನದ ಒಂದು ಅಂಗವೇ ಆಗುವಂತೆ ಮಾಡಲು ಶ್ರಮಿಸುತ್ತಿದ್ದೇವೆ. ಪಠ್ಯಪುಸ್ತಕಗಳಿಂದ ದೂರ ಸರಿದು, ಜಾನಪದ ಗೀತೆ, ದಾಸರ ಪದಗಳು, ವಚನಕಾರರ ವಚನಗಳು, ಹಿರಿಯ ಕವಿಗಳ ಪ್ರಕೃತಿ ಬಗೆಗಿನ ಮತ್ತು ಇತರ ಕವಿತೆಗಳ ಪರಿಚಯದ ಜೊತೆಗೆ, ಕವಿಗಳ ಸಂಕ್ಷಿಪ್ತ ಪರಿಚಯ ನೀಡುತ್ತಿದ್ದೇವೆ. ಸಾಧ್ಯವಾದಾಗ ಆಯಾ ಕವಿಗಳ ಬಂಧುವರ್ಗದವರನ್ನು ಅಥವಾ ಅವರ ಗುರುತು ಪರಿಚಯದವರನ್ನು ಶಾಲೆಗೆ ಕರೆಯಿಸಿ ಮಕ್ಕಳೊಂದಿಗೆ ಮಾತನಾಡುವ ಅವಕಾಶ ಕಲ್ಪಿಸಿ ಕೊಡುತ್ತಿದ್ದೇವೆ. ಉದಾಹರಣೆಗೆ, ಜಿ. ಪಿ. ರಾಜರತ್ನಂ ಅವರ ಮಕ್ಕಳು ಶಾಲೆಗೆ ಬಂದು ತಮ್ಮ ತಂದೆಯವರ ಬಗ್ಗೆ ಮಾತನಾಡಿದರು. ಅಂತಹ ಅವಕಾಶವಿಲ್ಲದಿದ್ದಾಗ, ಕವಿಗಳ ಜೀವನಕ್ಕೆ ಸಂಬಂಧಪಟ್ಟ ವಿವರಗಳನ್ನು, ಸಂಗತಿಗಳನ್ನು ಮಕ್ಕಳೊಂದಿಗೆ ಹಂಚಿಕೊಂಡು ಅವರ ಕಲಿಕೆ ಹೆಚ್ಚು ಅರ್ಥಪೂರ್ಣವಾಗುವಂತೆ ಮಾಡುತ್ತಿದ್ದೇವೆ.

ಹಾಡನ್ನು ಹೇಳುವಾಗ ಸ್ಪಷ್ಟ ಉಚ್ಚಾರಣೆಯೊಂದಿಗೆ ಹೇಳುವುದನ್ನು ರೂಢಿಸಿದರೆ ಮಕ್ಕಳು ಭಾಷೆಯನ್ನು ಸರಿಯಾಗಿ ಮತ್ತು ಬೇಗ ಕಲಿಯುತ್ತಾರೆ. ಇದರ ಜೊತೆಗೆ ಪದಲಾಲಿತ್ಯ ಅವರ ಕಿವಿಯ ಮೇಲೆ ತನ್ನದೇ ಆದ ಪ್ರಭಾವವನ್ನು ಬೀರಿ ಸಾಹಿತ್ಯದಲ್ಲಿ ರುಚಿ ಬೆಳೆಸುತ್ತದೆ. ಮಕ್ಕಳಿಗೆ ಹೇಳಿಕೊಡಬೇಕಾದ ಪದ್ಯಗಳನ್ನು ಮೊದಲು, ಹೇಳಿಕೊಡುವವರು ಆನಂದಿಸಬೇಕಾದದ್ದು ಬಹು ಮುಖ್ಯ. ಅವರ ಆ ಆನಂದವೇ ಮಕ್ಕಳಿಗೆ ತಟ್ಟುತ್ತದೆ. ಆ ಆನಂದವೇ, ಪದ್ಯಗಳನ್ನು ಮಕ್ಕಳು ಸದಾ ನೆನಪಿನಲ್ಲಿಟ್ಟುಕೊಳ್ಳುವಂತೆ ಮಾಡುತ್ತದೆ. ಪದ್ಯವನ್ನು ಹೇಳಿಕೊಡುವಾಗ, ಪದ್ಯದ ಭಾವವನ್ನು ಮನದಟ್ಟು ಮಾಡಿಕೊಂಡು, ಅದಕ್ಕೆ ತಕ್ಕಂತೆ ಧ್ವನಿಯಲ್ಲಿ ಏರಿಳಿತಗಳನ್ನುಂಟುಮಾಡಿ, ಭಾವವನ್ನು ವ್ಯಕ್ತಪಡಿಸಲು ಸಾಂಕೇತಿಕವಾದ ಅಭಿನಯವನ್ನು ಅಳವಡಿಸಿಕೊಳ್ಳುವುದು ಹೆಚ್ಚು ಸಹಾಯಕವಾಗುತ್ತದೆ.

ಈ ರೀತಿಯಾಗಿ ಪದ್ಯಗಳನ್ನು ಹೇಳಿಕೊಟ್ಟರೆ ಮಕ್ಕಳು ಮಂತ್ರಮುಗ್ಧರಾಗುತ್ತಾರೆ. ಅವರ ಮೇಲೆ, ಆದ ಪದ್ಯಗಳ ಪ್ರಭಾವ ಬಹುಕಾಲದವರೆಗೆ ಉಳಿದು ಅವರಲ್ಲಿ ಆಸಕ್ತಿ ಹುಟ್ಟಿಸುವಲ್ಲಿ ಸಫಲವಾಗುತ್ತದೆ. ನಮ್ಮ ಶಾಲೆಯ ಮಕ್ಕಳು ತಮ್ಮ ಕಲಿಕಾವಧಿಯಾದ ಏಳು ವರ್ಷಗಳಲ್ಲಿ ಸುಮಾರು ತೊಂಭತ್ತರಿಂದ ನೂರರವರೆಗೆ ಸಣ್ಣ ಮತ್ತು ದೊಡ್ಡ ಪದ್ಯಗಳನ್ನು ಕಲಿಯುತ್ತಾರೆ.



ಶಿಕ್ಷಣದಲ್ಲಿ ಕತೆಗಳ ಪಾತ್ರ

ಕತೆ ಹೇಳುವ ಮತ್ತು ಕೇಳುವ ಕಲೆ ಮಾನವನಿಗೆ ಪ್ರಕೃತಿದತ್ತವಾಗಿ ಬಂದಿದೆ. ಇದಕ್ಕೆ ಯಾವ ವಯಸ್ಸಿನ ಮಿತಿಯೂ ಇಲ್ಲ. ಮಕ್ಕಳಂತೂ ಕತೆ ಎಂದರೆ ಮೈಯೆಲ್ಲ ಕಿವಿಯಾಗಿ ಆಲಿಸುತ್ತಾರೆ. ಈ ಸಂದರ್ಭದಲ್ಲಿ ಕತೆಹೇಳುವವರ ಹೊಣೆ ಹಿರಿದಾಗಿರುತ್ತದೆ. ಕತೆಯ ಮುಖ್ಯ ಉದ್ದೇಶ ಮನರಂಜನೆಯಾಗಿ ಕಂಡು ಬಂದರೂ ಅದರ ಪ್ರಯೋಜನಗಳು ಅನೇಕವಾಗಿವೆ. ಕತೆಗಳ ಮೂಲಕ ಪರೋಕ್ಷವಾಗಿ, ಜ್ಞಾನಾಭಿವೃದ್ಧಿ, ಭಾಷೆಯ ಬೆಳವಣಿಗೆ, ನುಡಿಗಟ್ಟುಗಳ ಪರಿಚಯ, ಬುದ್ಧಿ ಮತ್ತು ತರ್ಕ ಶಕ್ತಿಯ ಬೆಳವಣಿಗೆ, ಕಾರ್ಯ ಕಾರಣಗಳ ಸಂಬಂಧ, ವ್ಯಕ್ತಿತ್ವದ ವಿಕಾಸ, ಮೌಲ್ಯಗಳ ಪರಿಚಯ ಇತ್ಯಾದಿ ಅನಾಯಾಸವಾಗಿ ಆಗುತ್ತವೆ.

ಯಾವುದೇ ವಿಷಯವನ್ನು ಸುಲಭವಾಗಿ ಗ್ರಹಿಸಲು ಮತ್ತು ಕಲಿಕೆಯನ್ನು ಸುಗಮವಾಗಿ ಮುಂದುವರಿಸಿಕೊಂಡು ಹೋಗಲು ಕತೆಗಳು ಒಳ್ಳೆಯ ತಳಹದಿಯನ್ನು ನಿರ್ಮಿಸುತ್ತವೆ. ವಾಸ್ತವವಾಗಿ ಬಹಳ ಚಿಕ್ಕ ವಯಸ್ಸಿನಿಂದಲೇ ಇದು ನಡೆಯ ಬೇಕು, ಆದರೆ ಇಂದಿನ ಸಮಯಾಭಾವದ ಜೀವನ ಶೈಲಿಯಲ್ಲಿ ಕತೆ ಹೇಳುವ ಪದ್ಧತಿ ಮಾಯವಾಗುತ್ತಿದೆ. ಆದುದರಿಂದ ನಾವು ಶಾಲೆಯಲ್ಲಾದರೂ ಅದಕ್ಕೆ ಸ್ಥಾನವನ್ನು ಕೊಡಲೇಬೇಕಾಗುತ್ತದೆ.

ಕತೆ ಹೇಳುವಾಗ ಗಮನದಲ್ಲಿಡಬೇಕಾದ ಅಂಶಗಳು:

- ಮಕ್ಕಳ ಮನೋಮಟ್ಟವನ್ನು ಅರಿತು ಅದಕ್ಕೆ ತಕ್ಕಂತೆ ಕತೆಯನ್ನು ಆಯ್ಕೆ ಮಾಡಬೇಕು.
 - ಕತೆಯನ್ನು ಹೇಳುವ ಧಾಟಿ ಏಕತಾನದಲ್ಲಿರದೆ ಕತೆಯ ವಿಷಯಕ್ಕೆ ತಕ್ಕಂತೆ ಏರಿಳಿತದ ಧ್ವನಿಯಲ್ಲಿ ಭಾವಪೂರ್ಣಗೋಳಿಸಿ, ಸಣ್ಣ ಪುಟ್ಟ ಅಭಿನಯದ ಮೂಲಕ ಪ್ರಭಾವಶಾಲಿಯಾಗಿ ಮಾಡಬೇಕು.
 - ಮಕ್ಕಳು ಕತೆಯಲ್ಲಿ ಹೇಳಿದ್ದೆಲ್ಲವನ್ನು ಮರೆಯದೆ ನೆನಪಿಟ್ಟುಕೊಳ್ಳುತ್ತಾರೆ. ಅಲ್ಲದೆ ಕತೆ ಸ್ವಾರಸ್ಯಪೂರ್ಣವಾಗಿದ್ದು, ಆಕರ್ಷಕ ರೀತಿಯಲ್ಲಿ ಹೇಳಿದ್ದರೆ ಅದನ್ನು ಮತ್ತೆ ಮತ್ತೆ ಮೆಲಕುತ್ತಾರೆ. ಅವರ ಈ ಗುಣ ಅವರ ಭಾಷಾಮಟ್ಟವನ್ನು ಹೆಚ್ಚಿಸಲು ಅನುಕೂಲವಾಗುತ್ತದೆ. ಇದನ್ನು ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು ಕತೆ ಹೇಳುವವರು ಒಂದು ಕತೆಯಲ್ಲಿ ನಿಷ್ಕೃಷ್ಟವಾದ ಪದಗಳನ್ನು ಬಳಸಬೇಕು. ಮಕ್ಕಳು ಅವನ್ನು ಸುಲಭವಾಗಿ ಕಲಿಯುತ್ತಾರೆ.
 - ವಿಷಯದ ದೃಷ್ಟಿಯಿಂದ ಭಿನ್ನತೆ ಇರುವಂತೆ ನೋಡಿಕೊಳ್ಳಬೇಕು. ಪೌರಾಣಿಕ, ಪಾರಂಪರಿಕ, ಜಾನಪದ, ಐತಿಹಾಸಿಕ, ಬುದ್ಧಿವಂತಿಕೆಯ, ಹಾಸ್ಯದ, ಜಾತಕ, ಪಂಚತಂತ್ರ, ವೈಜ್ಞಾನಿಕ, ಸತ್ಯವಿಷಯದ, ಹಿರಿಯವ್ಯಕ್ತಿಗಳ, ಸ್ವಾರಸ್ಯಕರ ಮುಂತಾದ ವಿವಿಧ ಕ್ಷೇತ್ರಗಳಿಂದ ಆರಿಸಿದ ಕತೆಗಳನ್ನು ಹೇಳುವುದರಿಂದ ಅವರ ಪದಸಂಪತ್ತು ಬೆಳೆಯುತ್ತದೆ, ಜ್ಞಾನಾಭಿವೃದ್ಧಿಯಾಗುತ್ತದೆ.
- ಹೀಗೆ ಮಾಡುವುದರಿಂದ ಸ್ವಲ್ಪ ಸಮಯದ ನಂತರ ಮಕ್ಕಳು ತಾವೇ ಕತೆಯನ್ನು ಓದಲು ಆರಂಭಿಸುತ್ತಾರೆ, ಆದರೂಕೂಡ ನಾವು ಕತೆ ಹೇಳುವುದನ್ನು ನಿಲ್ಲಿಸಬಾರದು. ಅವರು ಓದಿ ಅರ್ಥ ಮಾಡಿಕೊಳ್ಳುವ ಮಟ್ಟಕ್ಕಿಂತ ಮೇಲಿನ ಮಟ್ಟದ ಕತೆಗಳನ್ನು ನಾವು ಹೇಳುತ್ತಿರಬೇಕು.

ಕಲಿಕೆಯಲ್ಲಿ ನಾಟಕದ ಸ್ಥಾನ

ಕತೆ ಕೇಳುವುದು, ಕತೆ ಹೇಳುವುದು, ಕತೆ ಕಟ್ಟುವುದು, ಹಾಡು ಹೇಳುವುದು, ನಾಟಕ ಆಡುವುದು ಈ ಎಲ್ಲ ಗುಣಗಳು ಮಕ್ಕಳಿಗೆ ಸಹಜವಾಗಿ ಬರುತ್ತವೆ. ಇವುಗಳನ್ನು ಪೋಷಿಸಿ ಮಕ್ಕಳ ವ್ಯಕ್ತಿತ್ವವನ್ನು ವಿಕಾಸಗೊಳಿಸ ಬೇಕಾದದ್ದು ಹಿರಿಯರ, ಮುಖ್ಯವಾಗಿ ಅಧ್ಯಾಪಕರ ಆದ್ಯ ಕರ್ತವ್ಯ. ಬಾಲ್ಯದಲ್ಲಿ, ಒಂದು ಸಣ್ಣ ಹಾಡಿನ ಅಭಿನಯ ಅಥವಾ ಪ್ರಸಂಗದ ಅಭಿನಯದಿಂದ ಆರಂಭಗೊಂಡು, ವಿದ್ಯಾರ್ಥಿ ಜೀವನದಲ್ಲಿ, ನಾಟಕ ಕಲೆ ಪುಷ್ಟಿಗೊಂಡು ಬೃಹತ್ತಾಗಿ ಬೆಳೆಯುವ ಅವಕಾಶವಿರುತ್ತದೆ. ನಾಟಕ ಒಬ್ಬರೇ ಮಾಡುವ ಚಟುವಟಿಕೆಯಲ್ಲ. ಅನೇಕರು ಕೂಡಿ ಮಾಡುವ ಚಟುವಟಿಕೆ. ನಾಟಕದ ಪ್ರಸಂಗಗಳ ಅಭಿನಯ, ಇತರ ಪಾತ್ರಗಳಿಗೆ ತಕ್ಕಂತೆ ಸ್ಪಂದಿಸುವುದು, ನಿರ್ದೇಶಕರು ಹೇಳಿದುದನ್ನು ಚೆನ್ನಾಗಿ ಅರಿತುಕೊಂಡು ಪಾಲಿಸುವುದು, ಪಾತ್ರಕ್ಕೆ ತಕ್ಕಂತೆ ತನ್ನ ಸ್ವಭಾವವನ್ನು ಮಾರ್ಪಡಿಸಿಕೊಳ್ಳುವುದು ಇತ್ಯಾದಿ ನಾಟಕಕ್ಕೆ ಅತಿಮುಖ್ಯವಾದವುಗಳು. ಇನ್ನೊಬ್ಬರ ಇಚ್ಛೆ ಅನಿಚ್ಛೆ, ಆಸೆ ನಿರಾಸೆ, ಚಟುವಟಿಕೆಯ ಗತಿ, ಸಾಮರ್ಥ್ಯ, ಮನೋಲಹರಿಗಳು ಇವುಗಳನ್ನೆಲ್ಲ ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು ಅವುಗಳಿಗೆ ಹೊಂದಿಕೊಂಡು ವ್ಯಕ್ತಿ ತನ್ನ ಪಾತ್ರ ನಿರ್ವಹಿಸಬೇಕಾಗುತ್ತದೆ. ಇದು ಜೀವನಕಲೆಯಲ್ಲಿ ಕಲಿಯಬೇಕಾದ ಅತ್ಯಂತ ಮಹತ್ವದ ಪಾಠ. ನಾಟಕದ ಮೂಲಕ ಚಿಕ್ಕಂದಿನಿಂದಲೇ ಇದನ್ನು ಕಲಿಯುವ ಅವಕಾಶ ನಾವು ಮಾಡಿಕೊಡಬಹುದು. ಮಕ್ಕಳು ಬೇರೆ ಬೇರೆ ನಾಟಕಗಳಲ್ಲಿ ಬೇರೆ ಬೇರೆ ಪಾತ್ರ ಧರಿಸಿದಾಗ ಆಯಾ ಪಾತ್ರಗಳ ಸ್ವಭಾವದ ಮನವರಿಕೆ ಮಾಡಿಕೊಂಡು, ಅಭಿನಯಿಸ ಬೇಕಾಗುತ್ತದೆ. ಇದರಿಂದ ಮಾನವನ ಸ್ವಭಾವಗಳ ಅರಿವು ಉಂಟಾಗುತ್ತದೆ, ಮತ್ತು ಹೃದಯ ವಿಶಾಲಗೊಳ್ಳುತ್ತದೆ.

ಒಂದು ಕತೆಯನ್ನು ಆರಿಸಿದ ಮೇಲೆ, ಅದನ್ನು ನಾಟಕವನ್ನಾಗಿ ಮಾಡುವಾಗ ಮಕ್ಕಳನ್ನು ಅದರಲ್ಲಿ ತೊಡಗಿಸುವುದು ಒಳ್ಳೆಯದು. ಇದರಿಂದ ಕತೆ ಮತ್ತು ನಾಟಕಕ್ಕೆ ಇರುವ ವ್ಯತ್ಯಾಸ ಮಕ್ಕಳಿಗೆ ಮನದಟ್ಟಾಗುತ್ತದೆ. ಚರ್ಚೆಗೆ ಅವಕಾಶ ಕೊಟ್ಟಲ್ಲಿ, ಅವರು ತಮ್ಮ ತಮ್ಮಲ್ಲಿಯೇ ವಿಚಾರ ವಿನಿಮಯ ಮಾಡಿಕೊಂಡು ಉತ್ತಮವಾದ ಸಲಹೆಗಳನ್ನು ಕೊಡುತ್ತಾರೆ. ಸಲಹೆ ಸಮರ್ಪಕವಾಗಿರದಿದ್ದಲ್ಲಿ ಅದನ್ನು ಅವರೊಂದಿಗೆ ಚರ್ಚಿಸುವುದು ಬಹು ಮುಖ್ಯ. ಸಂಭಾಷಣೆಗಳನ್ನು ಬರೆಯುವಾಗಲೂ ಇದೇ ನೀತಿ ಇಟ್ಟು ಕೊಳ್ಳುವುದು ಒಳಿತು. ಪಾತ್ರಕ್ಕೆ ತಕ್ಕಂತೆ ಭಾಷೆಯ ಬಳಕೆ ಇರಬೇಕು ಎಂಬುದು ಅವರ ಗಮನಕ್ಕೆ ಬರುತ್ತದೆ. ಅವರುಗಳು ಹೇಳಿದ ಮಾತುಗಳನ್ನು ಬರೆಯುವಾಗ ಆಡು ಭಾಷೆಗೂ ಬರವಣಿಗೆಯ ಭಾಷೆಗೂ ಇರುವ ವ್ಯತ್ಯಾಸ ಹೆಚ್ಚು ಮನದಟ್ಟಾಗುತ್ತದೆ. ಸಂಭಾಷಣೆ ಹೆಚ್ಚು ಪ್ರಭಾವಶಾಲಿಯಾಗಲು ನಾಣ್ಯಡಿಗಳನ್ನು ಹೇಗೆ, ಎಲ್ಲಿ, ಉಪಯೋಗಿಸಬಹುದು ಎಂಬುದನ್ನು ಅಧ್ಯಾಪಕರು ತೋರಿಸಿಕೊಡಬಹುದು. ಚಿಕ್ಕ ಪುಟ್ಟ ಹಾಡುಗಳನ್ನು ಕಟ್ಟಿ ಸಂದರ್ಭಕ್ಕೆ ತಕ್ಕಂತೆ ನಾಟಕದಲ್ಲಿ ಹೆಣೆಯುವುದರಿಂದ ಅದರ ಪ್ರಭಾವ ಹೆಚ್ಚುವುದನ್ನು ತೋರಿಸಿ ಕೊಡಬಹುದು. ಪಾತ್ರಗಳ ಆಯ್ಕೆಯನ್ನು ಅವರಿಗೆ ಬಿಟ್ಟುಕೊಡುವುದರಿಂದ ಅವರಲ್ಲಿ ಹೊಣೆಗಾರಿಕೆಯ ಅನುಭವವಾಗಿ ಅದನ್ನು ಸಮರ್ಪಕವಾಗಿ ನಿರ್ವಹಿಸುವಂತೆ ಮಾಡುತ್ತದೆ. ರಂಗ ಸಜ್ಜಿಕೆ, ರಂಗ ಪರಿಕರಗಳ ತಯಾರಿಕೆ, ವೇಷಭೂಷಣಗಳ ವಿನ್ಯಾಸ ಇತ್ಯಾದಿಗಳಲ್ಲಿ ಅವರನ್ನು ತೊಡಗಿಸಿಕೊಳ್ಳುವುದರಿಂದ ಅವರ ಕಲಿಕೆ ವೃದ್ಧಿಗೊಳ್ಳುತ್ತದೆ. ನಾಟಕ ಆಡುವಾಗ ಸಂಭಾಷಣೆ, ನಾಟಕೀಯತೆ, ಅಭಿನಯ, ಧ್ವನಿಯ ಏರಿಳಿತ ಇತ್ಯಾದಿಗಳನ್ನು ಅಭ್ಯಸಿಸಬೇಕಾಗುತ್ತದೆ. ಈ ಕಲಿಕೆ ಮಗುವಿನಲ್ಲಿ ಶಿಸ್ತು, ಆತ್ಮ ವಿಶ್ವಾಸ, ಆನಂದಗಳನ್ನು ಮೂಡಿಸುತ್ತವೆ.

ಮೇಲೆ ಹೇಳಿದ ಗುಣಗಳ ಬೆಳವಣಿಗೆಯನ್ನು ಗಮನದಲ್ಲಿಟ್ಟುಕೊಂಡು, ಮಕ್ಕಳ ಮನೋಮಟ್ಟಕ್ಕೆ ತಕ್ಕಂತಹ ವಿಷಯಗಳನ್ನು ಆರಿಸಿ ನಾಟಕವಾಡಲು ಅಧ್ಯಾಪಕರು ಅವಕಾಶ ಮಾಡಿ ಕೊಡಬೇಕು.

ಪರಿಯೋಜನೆ

ಒಂದು ಪಠ್ಯ ಪುಸ್ತಕದಲ್ಲಿ ಅನೇಕ ವಿಷಯಗಳಿಗೆ ಬಿಡಿ ಬಿಡಿಯಾದ ಸಂಕ್ಷಿಪ್ತವಾದ, ಲೇಖನಗಳಿರುತ್ತವೆ. ಸಮಯದ ಅಭಾವದಿಂದ ಅವುಗಳನ್ನು, ಅವುಗಳ ಒಂದು ಮುಂದುಗಳ ಸಂದರ್ಭ ತಿಳಿಸದೆ, ಜೀವನದಿಂದ ಪ್ರತ್ಯೇಕಗೊಳಿಸಿ, ಕೇವಲ ಒಂದು ಬಿಡಿಯಾದ ಪಾಠದಂತೆ ಹೇಳಿಕೊಟ್ಟಾಗ, ಅದು ಮಗುವಿಗೆ ನೀರಸವಾದ, ಯಾವ ಅರ್ಥವೂ ಕೊಡದ ಆದರೆ, ತಾನು ಮಾಡಿ ಮುಗಿಸಲೇ ಬೇಕಾದ ಕಠಿಣ ಕೆಲಸವಾಗುತ್ತದೆ. ಇಂತಹ ಸಂದರ್ಭದಲ್ಲಿ ಪರಿಯೋಜನೆಗಳು ಅತ್ಯಂತ ಔಚಿತ್ಯಪೂರ್ಣ.

ಪರಿಯೋಜನೆ ಎಂದರೆ, ಆರಿಸಿಕೊಂಡ ಒಂದು ವಿಷಯದ ಸುತ್ತ, ಸಂದರ್ಭಕ್ಕೆ ತಕ್ಕಂತೆ, ಸಾರ್ಥಕವಾದ ಇತರ ವಿಷಯಗಳನ್ನು ಅಳವಡಿಸಿ, ಆ ವಿಷಯದ ಬಗ್ಗೆ ಸಾಧ್ಯವಾದ ಮಟ್ಟಿಗೆ ಒಂದು ಇಡಿಯಾದ ಚಿತ್ರವನ್ನು ಮನಸ್ಸಿಗೆ ಮುಟ್ಟುವಂತೆ ಬಿಂಬಿಸುವ ಒಂದು ಪ್ರಯತ್ನ. ಇಂತಹ ಒಂದು ಪ್ರಯೋಗದ ಉದಾಹರಣೆ ಕೆಳಗೆ ಕೊಟ್ಟಿದೆ.

ಗೋವಿನ ಹಾಡು ಒಂದು ಪರಿಯೋಜನೆ:

ಅಧ್ಯಾಪಕನ ಪೂರ್ವ ಸಿದ್ಧತೆ:

ನಿರಂತರವಾದ ಅಧ್ಯಯನ ಮತ್ತು ಚಿಂತನೆಗಳೇ ಅಧ್ಯಾಪಕನ ಮೂಲ ಬಂಡವಾಳ. ಯಾವುದೇ ವಿಷಯವನ್ನು, ಒಂದು ಪರಿಯೋಜನೆಯ ರೂಪದಲ್ಲಿ ಪ್ರಸ್ತುತಪಡಿಸಬೇಕೆಂದುಕೊಂಡಾಗ, ಆ ವಿಷಯದ ಬಗ್ಗೆ ಆಳವಾಗಿ ಚಿಂತನೆ ಮಾಡುವುದು ಬಹು ಮುಖ್ಯ. ಗೋವಿನ ಹಾಡನ್ನು ಅದಕ್ಕಾಗಿ ಆರಿಸಿಕೊಂಡಾಗ, ಅದರ ಮೂಲರೂಪವನ್ನೂ, ಅದು ಹುಟ್ಟಿಕೊಂಡ ಬಗೆಯನ್ನೂ, ಅದರ ಇತರ ರೂಪಗಳನ್ನೂ, ಅದರ ಉದ್ದೇಶವನ್ನೂ, ಅದರ ಧ್ವನಿಯನ್ನೂ ಚೆನ್ನಾಗಿ ಅರ್ಥಮಾಡಿಕೊಳ್ಳಬೇಕು. ಅದರ ಬಗ್ಗೆ, ಇತರ ಹಿರಿಯ ಲೇಖಕರು ಮತ್ತು ಚಿಂತಕರು ಬರೆದ ವಿಷಯಗಳನ್ನು ಓದುವುದೂ ಸೂಕ್ತ. ಹೀಗೆ ಮಾಡಿದಾಗ, ಆ ವಿಷಯದ, ಆಳ ಮತ್ತು ಮಿತಿಗಳು, ಗಮನಕ್ಕೆ ಬಂದು, ಆ ಪರಿಯೋಜನೆಯ ರೂಪ ತಾನೇ ತಾನಾಗಿ ಬಿಚ್ಚಿಕೊಳ್ಳುತ್ತದೆ.

(ಉದಾಹರಣೆಗೆ, ಪು.ತಿ.ನ., ಯು. ಆರ್. ಅನಂತಮೂರ್ತಿ, ಮುಂತಾದವರ ಲೇಖನಗಳು, ಎಸ್. ಎಲ್. ಭೈರಪ್ಪನವರ “ತಬ್ಬಲಿಯು ನೀನಾದೆಮಗನೆ” ಕಾದಂಬರಿ ಇತ್ಯಾದಿ.)

ಉದ್ದೇಶ: ಕನ್ನಡ ನಾಡಿನ ಸಂಸ್ಕೃತಿಯ ಪರಿಚಯ,
ಭಾರತೀಯ ಸಮಾಜದಲ್ಲಿ ಗೊಲ್ಲರ, ಹಸುಗಳ, ಗೋಮಾಳದ ಸ್ಥಾನ,
ಹಸುವಿನ ಸ್ಥಿತಿಗತಿ- ಹಿಂದೆ ಮತ್ತು ಇಂದು,
ಗೋವಿನ ಹಾಡಿನ ಉದ್ದೇಶವನ್ನು ಪ್ರಕಾಶಕ್ಕೆ ತರುವ ಪ್ರಯತ್ನ.

ಮೂಲವಾಗಿ ಉಪಯೋಗಿಸಿದ

ವಿಷಯ ವಸ್ತುಗಳು:

ಗೋವಿನ ಹಾಡು,
ವರದೇನಹಳ್ಳಿಯ ಗೊಲ್ಲರು,
ಹಂಪಿ ವಿಶ್ವವಿದ್ಯಾನಿಲಯ ಪ್ರಕಟಿಸಿದ ಪುಸ್ತಕ “ ಪುಣ್ಯಕೋಟಿ ”
“ ಪುಣ್ಯಕೋಟಿ ” ನಾಟಕ ಮತ್ತು “ ಗೋವಿನ ಬಾಳು ” ಹಾಡು,
ಹಸುವಿನ ಬಗ್ಗೆ, ಪತ್ರಿಕೆಯಿಂದ ಆಯ್ದ ಲೇಖನ.

ಈ ಉದ್ದೇಶಗಳನ್ನು ಆಧರಿಸಿದ

ಸಾಮಾನ್ಯ ಚಟುವಟಿಕೆಗಳು:

ಕೃಷ್ಣನ ಕತೆ,
ಗೋವಿನ ಕತೆಗಳ ರೂಪಾಂತರ,
ಸತ್ಯದ ಗೆಲುವಿನ ಕತೆಗಳನ್ನು ಆಲಿಸುವಿಕೆ.
ಉದಾಹರಣೆಗೆ, ಗಾಂಧೀಜಿ, ಬುದ್ಧ ಮತ್ತು ಸುಧಾಮೂರ್ತಿಯವರು ಬರೆದ
“ ಏರಿಳಿತದ ದಾರಿಯಲ್ಲಿ ” ಯಿಂದ ಆರಿಸಿದ ಕತೆಗಳು.
ವರದೇನ ಹಳ್ಳಿಯಲ್ಲಿ ಗೊಲ್ಲರ ಸಂದರ್ಶನ,
ಹಸುವಿನ ಲಾಲನೆ ಪಾಲನೆ ಮತ್ತು ಅದರ ಸ್ಥಿತಿಗಳ ಬಗ್ಗೆ ತಿಳುವಳಿಕೆ,
ಪದ್ಯವನ್ನು ಹಂತ ಹಂತವಾಗಿ ಬಾಯಿಪಾಠ ಮಾಡುವುದು,
ಅದನ್ನು ನಾಟಕದ ರೂಪದಲ್ಲಿ ಪ್ರದರ್ಶಿಸುವುದು,
ನಾಟಕಕ್ಕೆ ಬೇಕಾದ ಪರಿಕರಗಳನ್ನು ತಯಾರಿಸುವುದು,
ಹಾಲಿನ ಪೌಷ್ಟಿಕತೆಯ ಬಗ್ಗೆ ತಿಳಿದುಕೊಂಡು ಭಕ್ಷ್ಯಗಳನ್ನು ತಯಾರಿಸುವುದು,
ಸಾಧ್ಯವಾದರೆ ಗೋಶಾಲೆಗೆ ಒಂದು ಭೇಟಿ.

ಭಾಷಾ ಚಟುವಟಿಕೆ:

ಹಾಡಿನ ಕಲಿಕೆ,
ಪುಸ್ತಕವನ್ನು, ಸರಿಯಾದ ಉಚ್ಚಾರಣೆಯೊಂದಿಗೆ ನಿರರ್ಗಳವಾಗಿ ಓದುವುದು,
ಸಮಾನಾರ್ಥಕ ಮತ್ತು ವಿರುದ್ಧಾರ್ಥಕ ಪದಗಳನ್ನು ಕಲಿಯುವುದು.
ಪದಗಳನ್ನು ವಿಂಗಡಿಸುವುದು,
ಪ್ರಶೋತ್ತರಗಳನ್ನು ಬರೆಯುವುದು,
ಗೊಲ್ಲರ ಸಂಕ್ಷಿಪ್ತ ಪರಿಚಯ ಬರೆಯುವುದು ಇತ್ಯಾದಿ.

ಪರಿಯೋಜನೆಯಲ್ಲಿ ಅಳವಡಿಸುವ ವಿಷಯಗಳು ಸಾಕಷ್ಟಿರುತ್ತವೆ. ಆದರೆ ನಾವು, ಸಮಯದ ಮತ್ತು ಮಕ್ಕಳ
ಆಸಕ್ತಿಯ ಮಿತಿಯನ್ನು ಅರಿತು ಅದಕ್ಕೆ ತಕ್ಕಂತೆ ಕಲಿಕೆಯ ವಿಷಯವನ್ನು ರೂಪಿಸುವುದು ಸೂಕ್ತ.

Toy Making

Vidula Mhaiskar

On the second afternoon of the conference, the assembly hall at CFL was privy to a most unusual and entertaining spectacle: grown men and women blowing on straws and flying paper planes with all the enthusiasm of a bunch of ten year-olds! It is impossible for us to convey on boring plain paper the principles of a toy workshop. All we can do here is to share with you some photographs of that afternoon, and direct you to Arvind Gupta's website, which contains details of hundreds of books, toys and activities.

The hallmark of the toy workshop was the use of trash and waste material to make simple scientific concepts come alive, in ways children can both participate in and relate to.

<http://arvindguptatoys.com> will open a world of fun, and if you're not careful you might end up learning something!



Section Three: Workshops for Middle and Senior Age Groups

Math for Middle School

Shashidhar Jagadeeshan and Kamala Mukunda

Our approach to the teaching of mathematics

Many of us love mathematics and see that it is beautiful and part of an infinite order. However, a large number of children in almost all cultures are frightened or bored by mathematics. We as teachers seem to convey a sense of fear and helplessness with regard to mathematics rather than conveying its beauty and power. This feeling seems to persist even into adulthood. I am sure many among you have had the following experience. You meet a stranger and they ask you what your profession is; you say you teach mathematics and immediately they respond by either saying that they were very good at mathematics or become apologetic about having been terrible at mathematics! The most humorous incident in this regard that happened to me is when a German visitor told me “I am not scared of mathematics teachers, I am very good at mathematics”! In short very few are neutral towards mathematics – they either love it or hate it!

What is it about mathematics that creates this fear? We explore certain aspects of mathematics that contribute to this feeling.

Absolute authority imbued to the teacher

In a typical mathematics class, since all information flows from the teacher, students immediately set him or her up as an authority. There is really no room for discussion, where the student can contribute at a level comparable to the teacher. This feeling is further strengthened by the fact that students are rarely exposed to problems to which the teacher does not already know the solution, or where the teacher is ready to admit that he does not know and is willing to learn along with the student.

How do we loosen this authority?

- An affectionate and open relationship is an absolute must, if true learning has to take place. In fact none of the suggestions we offer will work, unless the teacher allows for such a relationship.
- Create an environment where students feel free to discuss their mathematical ideas.
- Expose students to open problems and other egalitarian situations where the teacher and the student are thinking and learning together. As a teacher it is a

great relief to admit once in a while that you do not know everything! Moreover, students can benefit from watching the teacher grapple with a problem. Number theory affords many such problems.

A sense of inadequacy

All over the world children and adults seem to classify themselves as ‘intelligent’ or ‘stupid’ depending on how they perform in mathematics. I feel it is very important as teachers that we do not equate intelligence with mathematical ability. Students can be well aware of differing abilities and capacities among each other in various fields. However, this awareness need not translate to low self-esteem.

How can this be accomplished?

- Encourage a spirit of cooperative learning, where students who find mathematics easy help those who do not.
- Do projects where the emphasis is on other aspects of mathematics than the algorithmic and arithmetical, such as spatial reasoning, pattern recognition, logical reasoning and aesthetics. Examples of such projects are: tessellations, constructing platonic solids, exploring patterns in the Pascal’s triangle, Fibonacci sequences and nature, fractals and so on.
- Such projects do not require a lot of prerequisite knowledge and so all children can partake in it on an even footing.

An assumption that there is only one way to solve a problem

The student often has the oppressive feeling while attempting a problem that the solution should come out cleanly, elegantly and in one attempt. In fact problem solving is the perfect arena to show children that many different approaches can legitimately give right answers. I am listing a few:

- Use trial and error as a legitimate strategy to find solutions and then try and understand why the solution makes sense.
- Using multiple approaches to solve a problem. For example, suppose you are given a random circle – how will you locate its centre? For a large class of problems we can come up with more than one approach.
- The teacher can model problem solving for the students, thinking aloud and demonstrating various methods and approaches.

A belief that mathematics does not allow experimentation

Mathematicians pride themselves that they need no more equipment than paper and pencil. However this notion can lead to false beliefs, for example, that mathematics does not lend itself to experimentation and exploration. Even in the most abstract areas of mathematics, intuition often comes from playing around

with concrete cases and very often pictures.

To dispel this belief:

- Wherever possible do simple experiments and use models and teaching aids to motivate a result.
- Encourage the use of pictures and graphs to represent and understand a problem. A pictorial representation can help us understand why a particular result is true and also help us conjecture results. For example, using graphs one can help students come up with all the solutions to equations such as $\sin x = 0.5$, and even derive the general formula for all cases.

Conclusion

In the course of this workshop, we hope that many of the ideas suggested above will be illustrated concretely and you will get a feel for what we are talking about. However, we would like to emphasize that we as teachers must be willing to question our own attitudes towards the learning and teaching of mathematics, and these projects and ideas can only supplement such a process of change.

Project 1: Logical thinking in mathematics

(This series of activities strengthening logical thinking in students is modified from the Nuffield Mathematics Programme.)

Age group: 10 to 12 years of age. Ideally suited for the time before they learn sets, Venn diagrams, or probability.

Duration: 5 or more sessions of 45 mins each

Objectives:

- to think clearly and logically about categories and sets
- to learn the precise mathematical use of the following words – and, or, not, neither, either, all, some, none, every, only, if, but.

Session 1

a. Give your class two lengths of rope (say 6m each) and tell them to ‘fence’ themselves off into two fields:

those who have a sister, those who have a brother.

Tell them to work together to do this. With minimum guidance from you, they will end up creating a neat Venn diagram, with the classroom as the Universal set!

b. Ask them a series of questions about their arrangement:

“Tell me as briefly and clearly as possible, who are (these students)?” Where ‘these’ students would refer to the sets $A \cap B$, $(A \cup B)'$, $A \cup B$, $A \cap B'$, $A' \cap B$

They should come upon the most precise phrasing as possible, as shown below.

Those who have both a sister *and* a brother

Those who have *neither* a sister *nor* a brother

Those who have *either* a sister *or* a brother

Those who have *only* a sister; or, those who have a sister but no brother

Those who have *only* a brother; or, those who have a brother but no sister

In discussing their answers, make sure the words AND, OR, NOT, ONLY, EITHER, NEITHER/NOR are used correctly, and highlight their use by writing them on the board. Watch out for the way OR is used – it is sometimes confused with AND.

c. Repeat this exercise with other categorizations. Examples are given below.

Those who like milk, those who like curd.

Those who have a dog, those who have a cat.

Those who like to swim, those who like to sing.

Those who like bitter gourd, those who like raisins.

d. If these have not already occurred in the above examples, give them situations where you know you will get a set within a set (subset), or no intersection (mutually exclusive categories). This will allow you to practice the use of words such as NONE, ALL, SOME. Examples of such situations are given below:

Those who have long hair, those who are girls (to be used in a class where the boys don't have long hair)

Those who are under 12 years, those who are under 13 years (to be used in a class where no child is yet 13 years old).

Those who walk to school, those who take the bus

Session 2

Shift to a slightly more abstract situation – working with cut-out shapes. Use this set of shapes with a group of 4 to 6 students, working cooperatively on the Logic Worksheet. Here, the words ALL, SOME, NONE, AND, OR are practiced.

The Logic Worksheet

To be used with two large loops of string, and a special set of 17 pieces:

Triangles – 3 red, 2 blue and 2 brown; Squares – 1 blue and 1 brown; Circles – 1 brown; Ellipses – 2 blue and 2 green; Pentagons – 3 blue.

1. Put all the triangles in one loop, and all the blue shapes in the other loop. How would you describe the shapes outside both loops, and the shapes inside both loops?

2. Put the two loops so that they do not overlap. Try to put all the red

shapes in one loop, and all the ellipses in the other loop. Can you do it? Why?

3. Put all the triangles in one loop, and all the red shapes in the other loop. Describe what you see.

4. Are all the red shapes in your set triangles? Are all the triangles red?

5. Make a pile of shapes such that all the blue ones are ellipses. Which shapes are not in your pile? Are all the ellipses in your pile blue?

6. True or False:

All the pentagons are blue

All the blue shapes are pentagons

None of the triangles are green

None of the green shapes are triangles

All the green shapes are ellipses

Some of the ellipses are green

7. Write down some statements of your own that are true about the set of shapes.

Session 3

Introduce the phrase ‘if.....then.....’ as another way of expressing ‘all’ and ‘none’ sentences. In question 6 of the logic worksheet, students can rephrase ‘all pentagons are blue’ (if a shape is a pentagon then it is blue), and so on. They can also rephrase ‘none of the triangles are green’ (if a shape is a triangle then it is not green), and so on.

Let the students investigate the reverse of these statements, such as ‘if a shape is blue then it is a pentagon’. Are these also true? What is special about the situations where both an if...then... statement and its reverse are true? You could even introduce the use of ‘if and only if’ – a beautiful phrase and very useful for mathematicians! Examples from school mathematics that use ‘if and only if’ logic are divisibility rules and Pythagorus theorem.

Ask them to explain why statements with ‘some’ (eg., some triangles are red) cannot easily be rephrased as if...then... statements. Have them investigate this with several such statements, using the set of shapes given.

Session 4

Shift to a more abstract situation, using numbers as elements. For convenience, fix the ‘universe’ as natural numbers between 0 and 25, say. Students will now be drawing circles in their notebooks and putting elements in. Examples are:

- Odd numbers, perfect squares
- Numbers greater than 10, numbers less than 20

- Numbers divisible by 3, numbers divisible by 4 (or 6, as a variation)
- Prime numbers, even numbers

They can be encouraged to write true statements about numbers using all the key words they have learned so far (each of them should have this list handy).

Session 5 and onwards

Play several logic games with this 48 card set. There are cards of three shapes, four colours, two sizes and marked/unmarked. The one-difference game is played by distributing cards equally to everyone (for large groups they can play in pairs). The object of the game is to get rid of your cards quickly, and you play by putting down a card from your collection that has *only one* difference (colour *or* shape *or* size *or* mark) from the card at the top of the centre pile. If you do not have any suitable card, you pass your turn.

Variations of this game are two-difference, three-difference and four-difference. It helps students to state aloud the differences they are making when they place their card down. For example, for a two difference game: *I am changing size and shape*. Players can ‘challenge’ each other with the obvious consequences, and so on!

Another game with this set is twenty questions. One student chooses a card and hides it. The others have to guess, using only yes/no questions, which one she has chosen.

Play a Venn diagram game – make three loops of string on the ground, allowing for overlaps as in a Venn diagram, and representing three attributes such as a colour, a shape and a size. Distribute the cards randomly to students. Each in turn has to place one of their cards in the correct place. If you want to make it a game with points scored etc., you could limit the time given to the student to correctly place their card. But not the first time you play it!

Since there are 4 variable factors in the 48 card set, you could extend to four loops (place all red shapes in one loop, all triangles in one loop, all large shapes in one loop, and all marked shapes in one loop). *However*, it’s an interesting fact that you can’t do this with circular loops! Try it – you can do it with other shapes though (ellipses, squares...).

Project 2: Nets and 3 dimensional solids

Age group: 11 and 12 year olds.

Duration: Roughly one period a week for about ten weeks

Objectives:

- to become familiar with some basic 3D solids (their proper names, 2D sketches and nets)

- to learn to use ruler, compass, protractor to construct nets given angles and lengths
- to develop spatial reasoning abilities and visual imagination
- to develop a sense of the importance of precision and neatness in work

Session 1

Name several basic solids: cube, cuboid, prism, tetrahedron, square based pyramid, cylinder, cone and sphere.

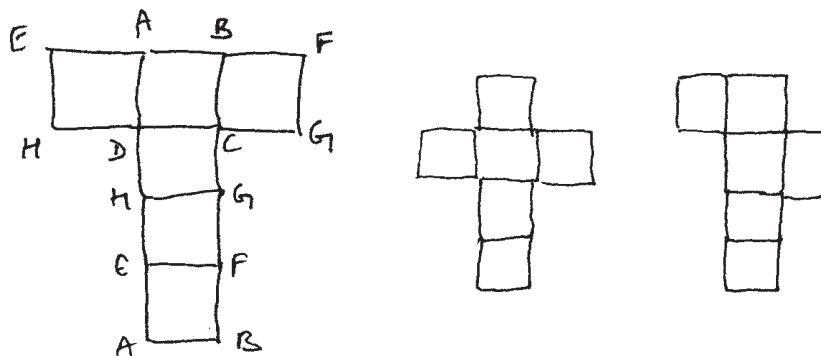
In each case, learn to draw the shape on a 2D plane.

Introduce the terms vertex, edge and face, and count the number of each for the shapes.

Make a table of vertices, edges and faces. Is there a pattern?

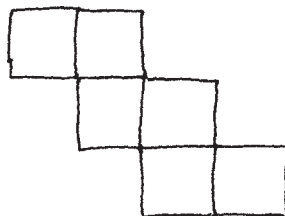
Session 2

When you go to a bakery, cakes and pastries are often packed in boxes folded on the spot. How is the cardboard cut to the right shape to make the boxes we want? The right shape is called a net. Let's start with the cube, the simplest. What would the net look like?



The cube has 8 vertices, so name all vertices in this net correctly from A through H. This process should be done with every net drawn from now on.

Are there other possibilities for a cube net?



Are there nets that would not work?

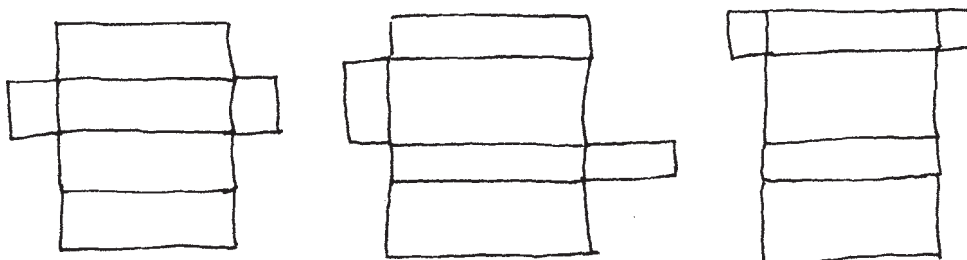


Having sketched a few nets, now we actually construct a net. The difference is in the precision. Accurate perpendiculars cannot be drawn by eye; they must be constructed using ruler and compass, or protractor. The nets are constructed on stiffish paper and before they are cut, the students must draw in the right number of flaps in the right places – not too many or too few!

In constructing their nets, the students can be given a choice of dimension (side of the cube). As they fold it, they receive immediate feedback on the precision or neatness of their own construction (edges may not meet, may overlap).

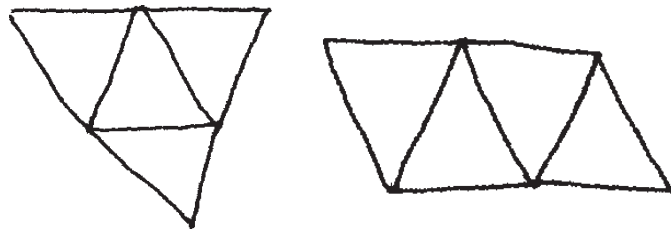
Session 3

Repeat the previous session for the cuboid. Possible nets are shown below. One impossible net is shown; students should be able to imagine why it will not work.



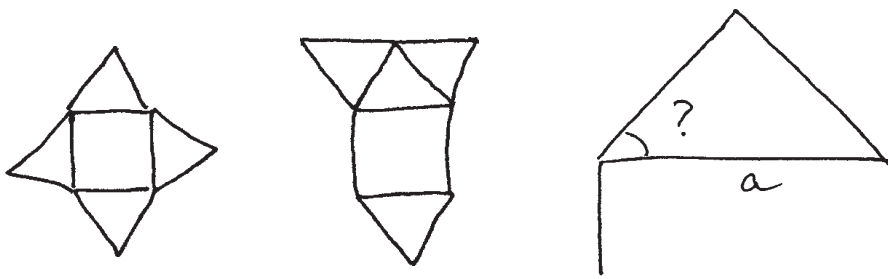
Session 4

For the tetrahedron, do a regular one. Sketch two nets, and construct any one or both, students to choose their own dimension. Students will realize the triangles must be equilateral, and you can show them how to use straight edge and compass to construct the equilateral triangle.



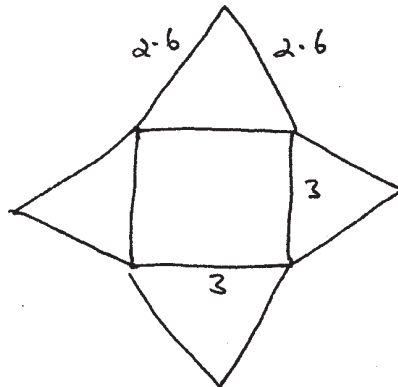
Session 5

For the square based pyramid, begin with the straight one (not skewed). Sketch two possible nets, naming the vertices as usual. Construct, allowing students to choose the length of the base, and the slant height of the pyramid by choosing the size of the base angle in each triangle. In the construction of this net, they will see that the triangles must be isosceles, and they will also see that the base angle must be greater than 45 to allow a pyramid to form.



Session 6

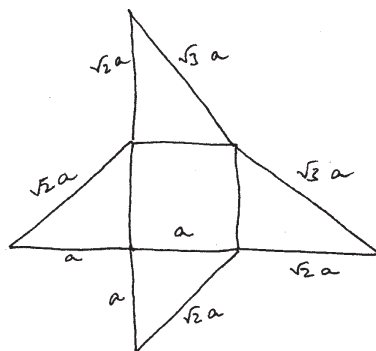
Have each student construct the net of a square based pyramid from the following sketch.



This sketch makes the slant height of the pyramid roughly half of the square root of 3 times the side of the base, or half the body diagonal of a cube made from six such pyramids! If you have a prepared cube net of the right size, six pyramids can be stuck onto it to make a fun folding toy. The students can try to understand how you came up with the slant height value, and if they know Pythagoras theorem they can derive the exact value.

Session 7

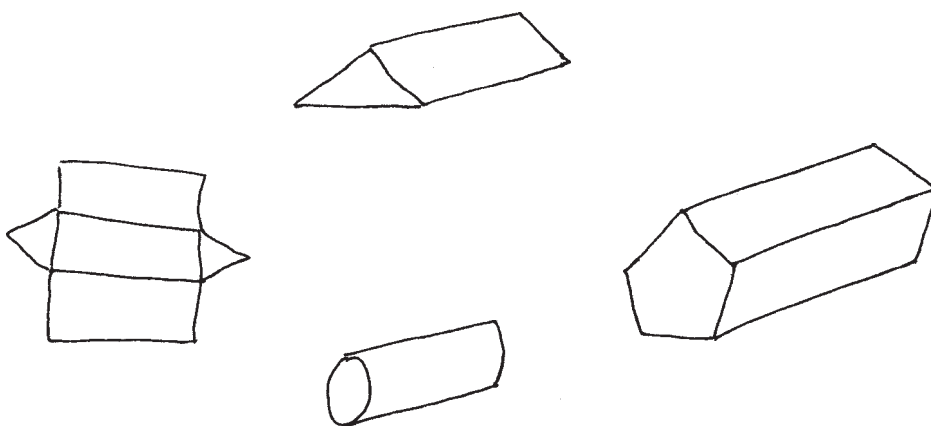
As a special topic, provide them the following net for a skewed or slanted square based pyramid.



Three of these will form a cube.

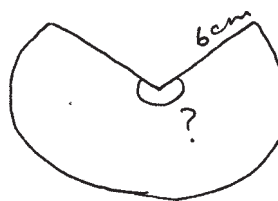
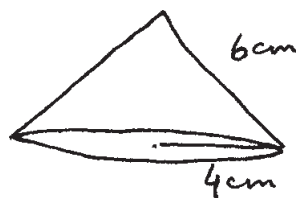
Session 8

Students can now construct their own nets for prisms (3D solids with uniform cross section) of their own choice – see examples. This leads to an understanding of the net of a cylinder open at both ends, as a rectangle!



Session 9

Investigate the shape of a net for a cone without its base. Most students make it a triangle, so they need to cut and try it out before coming upon the idea of a sector of a circle. They can try it out for different radii and angles of the sector, noting how the dimensions (height and base) of the cone vary. As a challenge, especially if they are not acquainted with π , have them come up with the net for a cone of given dimensions, if we are given that the circumference of any circle is roughly 6 times its radius. They may be able to derive that the ratio of base radius to slant height is the same as arc length to total circumference in the net.



Session 10

What about the sphere? They can see that it is not possible to make a perfect net for a sphere, even though it was possible to make nets for other curved surfaces such as cylinder and cone. You can show them various world map projections to indicate how that mapping problem is solved in different ways.

Project 3: Difference of squares – an exploration*

Age group: 12 – 13 year olds

Duration: One session of 45 minutes or at most two

Objective: Help children discover the identity through simple numerical calculations.

Step I

Compute the following differences of squares:

$$2^2 - 1^2 =$$

$$3^2 - 2^2 =$$

$$4^2 - 3^2 =$$

$$5^2 - 4^2 =$$

$$6^2 - 5^2 =$$

Do you see any pattern? Can you predict the following differences of squares?

$$7^2 - 6^2 =$$

$$8^2 - 7^2 =$$

How about

$$2006^2 - 2005^2 = ?$$

Now can you write down a formula using letters like x and y ?
(Students' first guess may be)

$$x^2 - y^2 = x + y$$

Are there any conditions on x and y ? Yes!

$$x - y = 1$$

* I would like to thank Mr. Tanuj Shah of Rishi Valley for introducing me to this idea.

So we can say

Check on an example:

According to us

$2006^2 - 2005^2$, should be $2006 + 2005 = 4011$

Let us check:

$$2006^2 = 4024036$$

$$2005^2 = 4020025$$

$$4024036 - 4020025 = 4011 = 2006 + 2005$$

So our formula works!

Step II

Compute the following differences of squares:

$$3^2 - 1^2 =$$

$$4^2 - 2^2 =$$

$$5^2 - 3^2 =$$

$$6^2 - 4^2 =$$

$$7^2 - 5^2 =$$

$$x^2 - y^2 =$$

Do you see any pattern? Can you predict the following differences of squares?

$$7^2 - 5^2 =$$

$$8^2 - 6^2 =$$

How about

$$2006^2 - 2004^2 = ?$$

Now can you write down a formula using letters like x and y ?

(With some help students may guess)

$$x^2 - y^2 = 2(x + y)$$

What about conditions on x and y ? Yes, we still have some conditions on x and y .

$$x - y = 2$$

So we can say

$$x^2 - y^2 = 2(x + y), \text{ if } x - y = 2$$

Check on an example:

So once again our formula works!

Step III

Now let us compute the following differences of squares:

$$4^2 - 1^2 =$$

$$5^2 - 2^2 =$$

$$6^2 - 3^2 =$$

$$2006^2 - 2004^2 \text{ should be } 2(2006 + 2004), \text{ let us check}$$

$$2006^2 = 4024036$$

$$2004^2 = 4016016$$

$$4024036 - 4016016 = 8020 = 2(2006 + 2004)$$

You might have already noticed that the difference between our chosen numbers is now 3. Remember in Step I it was 1 and in Step II it was 2.

Do you see any pattern? Can you straightaway write down a formula using letters like x and y?

(With some help students may guess)

$$x^2 - y^2 = 3(x + y), \text{ if } x - y = 3$$

Let us check the formula on some large numbers:

$$2006^2 - 2003^2, \text{ should be } 3(2006 + 2003) = 12027$$

$$2006^2 = 4024036$$

$$2003^2 = 4012009$$

$$4024036 - 4012009 = 12027$$

So once again our formula works!

Step IV

Now can you write down a formula for

$$x^2 - y^2 = ?$$

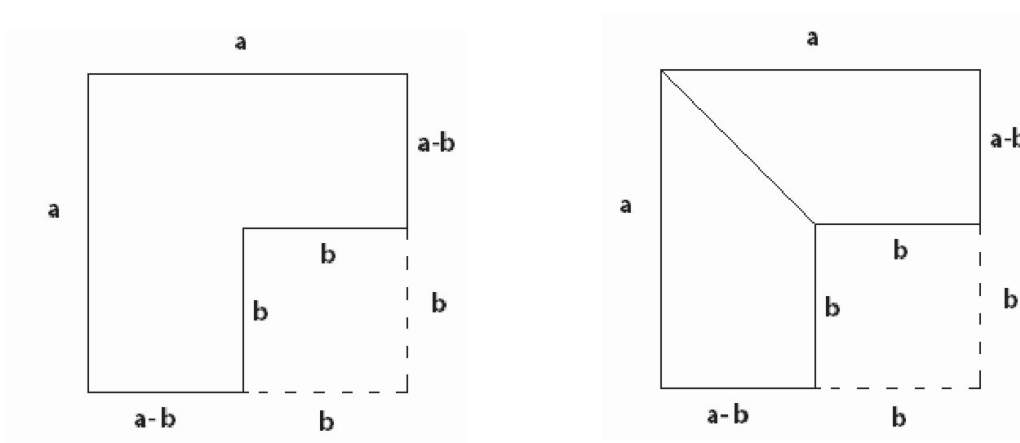
Yes! The formula is:

$$x^2 - y^2 = (x - y)(x + y)$$

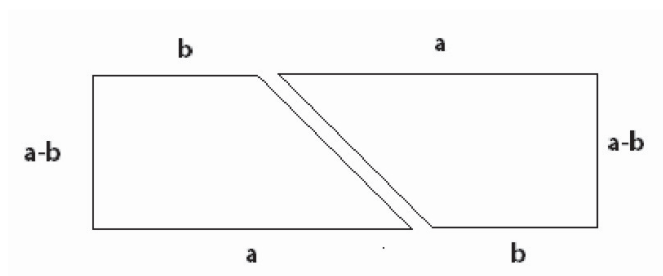
Notice we should mention here that in all our examples, x and y are natural numbers and we have also assumed that $x > y$. However, the point of the project is to help the child discover this result and after that one can always generalise to take into account all cases.

To demonstrate that the result is true for all positive real numbers a and b , perhaps the following pictorial proof is the best option.

$$a^2 - b^2$$



b



$$a^2 - b^2 \equiv (a - b)(a + b)$$

Project 4: The Königsberg Bridge Problem: An Investigation

Age group: 13 -14 year olds

Duration: Four to five 45 minute sessions

Objective: Help children investigate a mathematical problem in the guise of a puzzle and introduce them to the idea that a different representation or approach can lead to new insights. Also reinforce the need for proofs in mathematics.

Introduction:

The river Pregel flows through the town of Königsberg . It has seven bridges (B1, B2, ... B7) laid out like this:

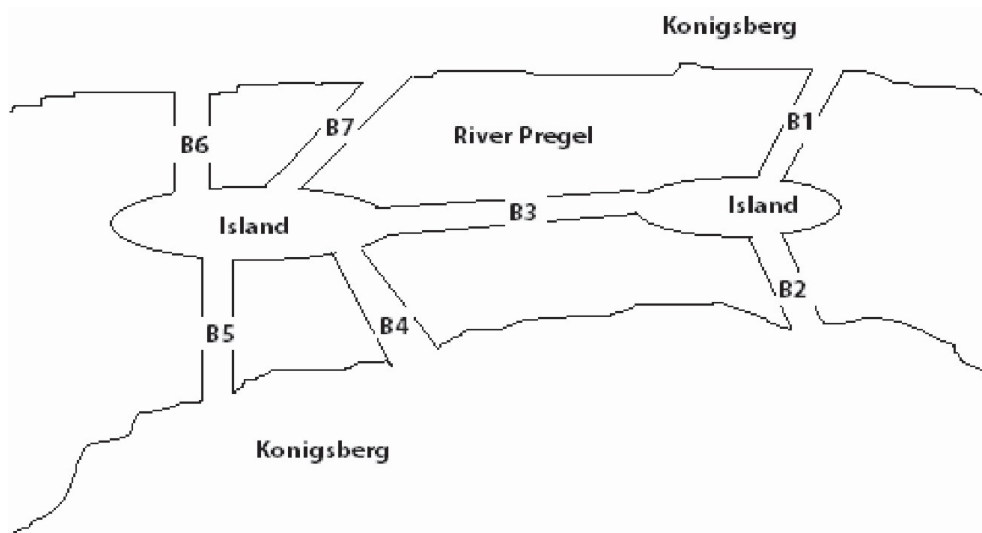
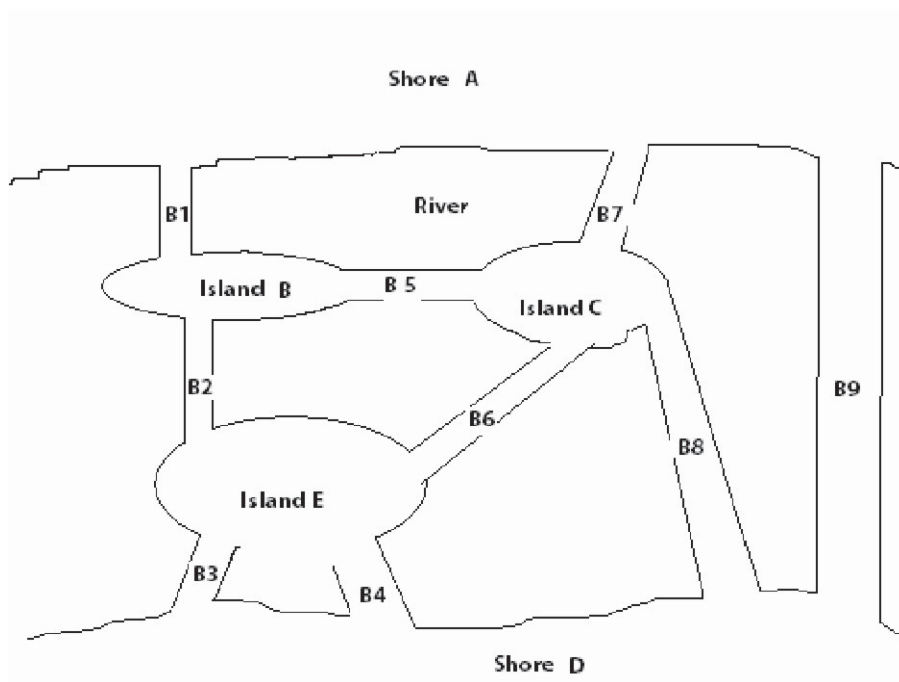
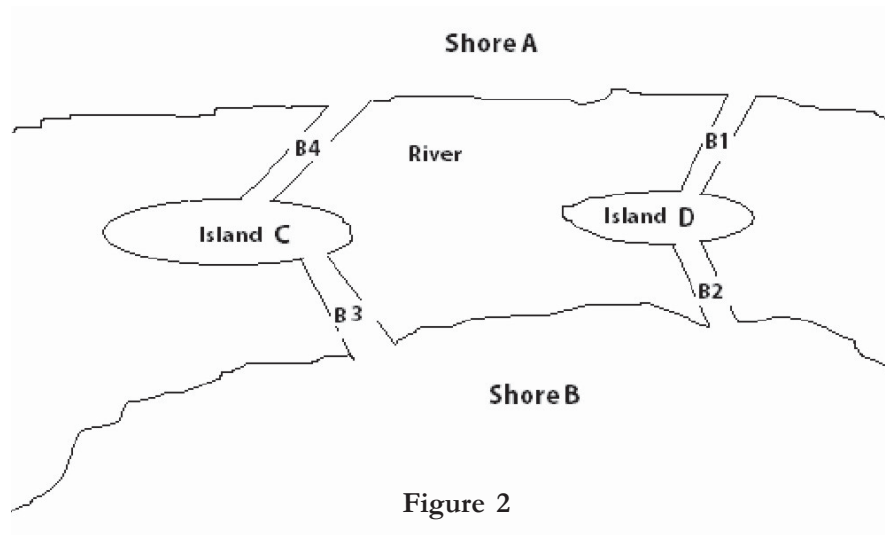


Figure 1

The people in the town wondered if it was possible to take a walk in the town and cross the bridges once and only once.

What do you think? Try out various possibilities. Record your guess.

Now look at similar towns each of which has a river with bridges and islands. The bridges are marked B1, B2 etc and the islands and shores are marked A, B etc.



We will look at several more such figures, and ask the same question: “Is it possible to take a walk through the town and cross the bridges once and only once?” As you investigate each, fill out the table below:

Figure	Is it possible to cross all bridges once and only once?
Figure 1	
Figure 2	
Figure 3	
Figure 4	
Figure 5	
Figure 6	
Figure 7	

Table 1

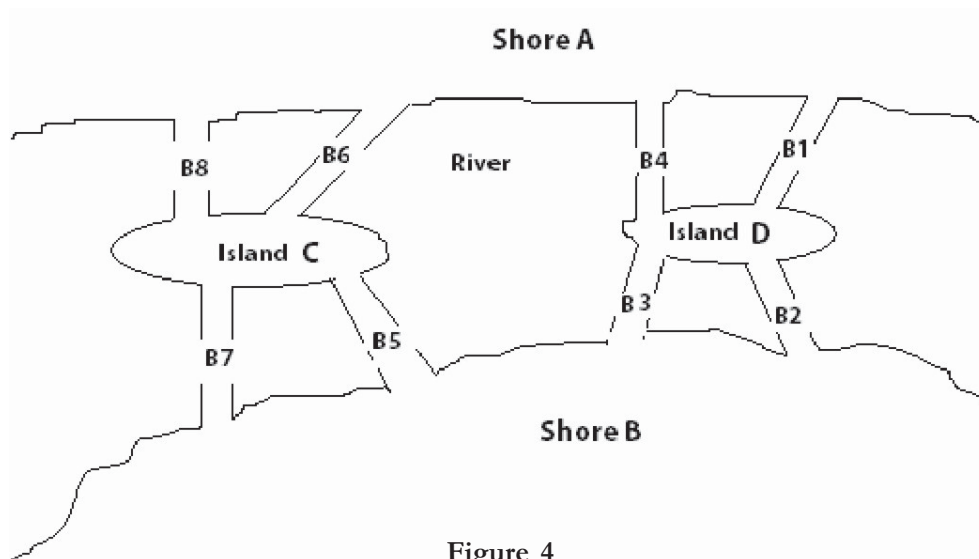


Figure 4

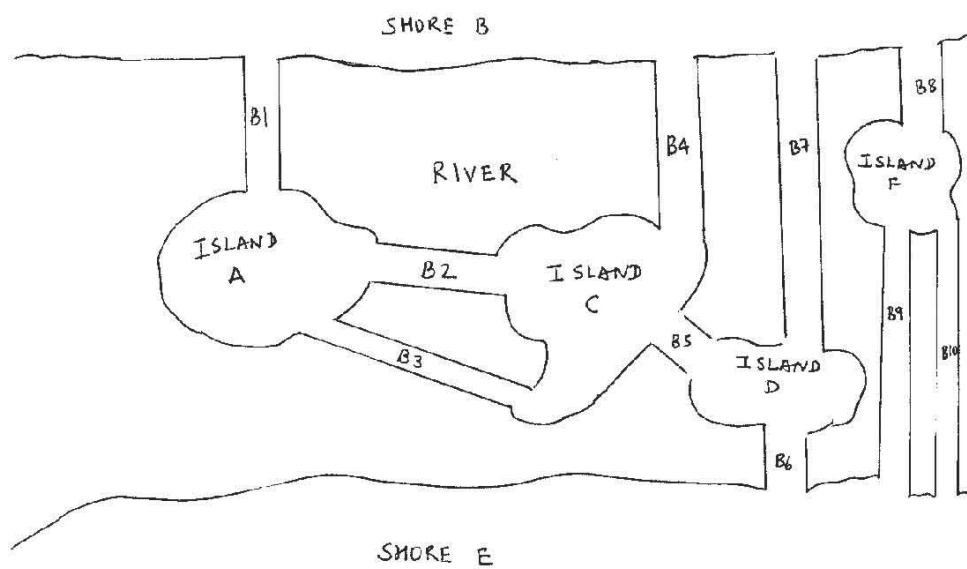


Figure 5

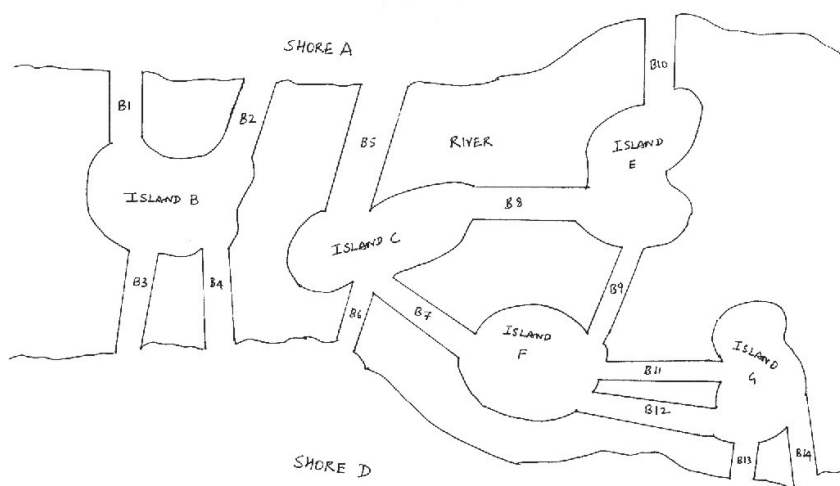


Figure 6

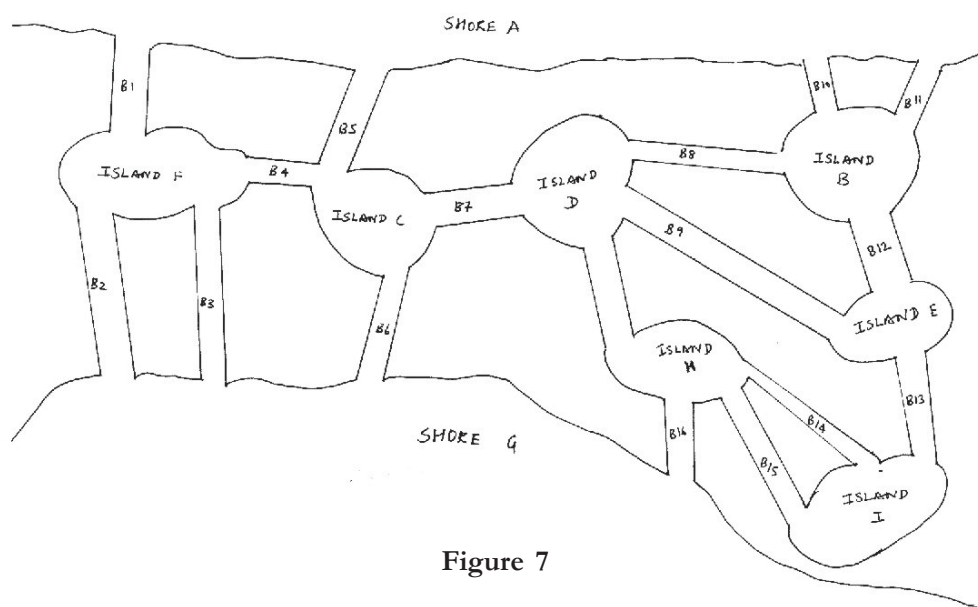


Figure 7

Having investigated the figures above, do you see any patterns? Record them.

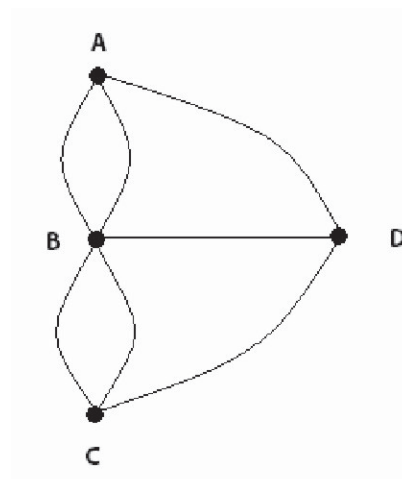
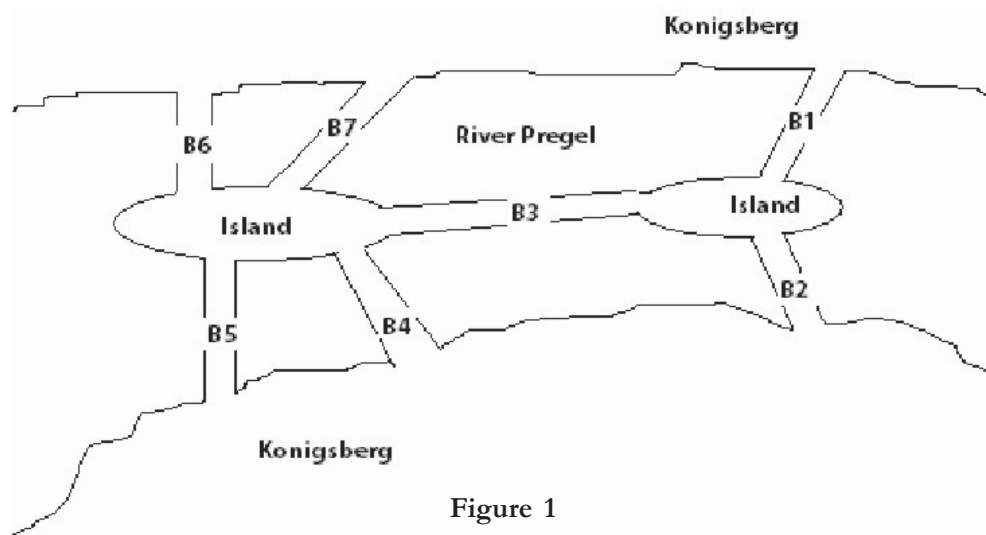
You might have noticed that when you say, yes it is possible to take a walk through the town by crossing each bridge once and only once, to justify the answer you need only demonstrate one such path and you are done. However, if you feel it is **impossible** to take a walk through the town by crossing each bridge once and only once, you have to work much harder to justify your answer. The problem is that there may be a path you have not thought of yet. So we need a ‘proof’ or a way of justifying our answer so that we can convince everyone, using only our powers of reasoning, that our answer is correct.

Euler’s Trick:

In 1736 Euler discovered a solution that could answer the question “Is it possible to take a walk through the town and cross the bridges once and only once?” not only for the above figures but for any town with bridges and islands.

Euler is considered one of the greatest mathematicians ever. He was incredibly prolific and published over 800 papers in his life time. In solving the Königsberg Bridge Problem, he created two new branches of mathematics – Graph Theory and Topology, which are now an integral part of modern mathematics.

To solve the problem he started with the following trick. He converted Figure 1 into a graph (see Graph 1)



A graph consists of vertices and edges. What Euler did was to collapse each shore or island to a vertex. So for example the shores on either side of the river Pregel are vertices A and C and the two islands are vertices B and D. If there is a bridge between land masses they are represented by an edge to obtain the above graph. He also noted the number of edges from each vertex. Why don't you convert each of the figures above into graphs and make a table listing the number of edges for each of the graphs. The table for Figure 1 is given below.

Vertex	No of edges
A	3
B	5
C	3
D	3

Table for Graph 1

Do you see any pattern? After many attempts and comparing your answers with your friends' answers your entries for Table 1 should be as follows:

Figure	Is it possible to cross all bridges once and only once ?
Figure 1	No
Figure 2	Yes
Figure 3	Yes
Figure 4	No
Figure 5	Yes
Figure 6	Yes
Figure 7	Yes

Now look at the tables associated with the figures where you have said it is possible for one to travel through the town crossing a bridge once and only once. Do the same for the ones where you have said it is not possible. Any ideas?

Here are some questions that may help you with your investigations:

(i) Identify the graphs which have tables where each vertex has even number of edges. You must have said it is possible to traverse the town satisfying our conditions. Can you explain why?

Do you think all graphs which have vertices with even number of edges can be traversed satisfying our conditions? Can you justify your answer?

(ii) Now look at the graphs for which you said 'yes'. Do all have even edges for each vertex? If no, is there any pattern for graphs with odd edges at vertices? If you have found a pattern then can you justify your answer?

Let us summarise our observations and put them down as a Theorem.

Observation 1: All towns whose graphs have even number of edges at each vertex can be traversed in such a way that one crosses each bridge once and only once.

Observation 2: All towns whose graphs have exactly two vertices with odd number of edges and all other vertices have even number of edges can be traversed in such a way that one crosses each bridge once and only once.

Definition 1: A graph is an **Euler graph** if there is a path on the graph using each edge once and only once.

Theorem 1 (Euler): A graph is an Euler graph if it satisfies any one of the following two conditions:

(i) if there are even number of edges at each and every vertex

(ii) If there are exactly two vertices with odd number of edges and all the rest are even.

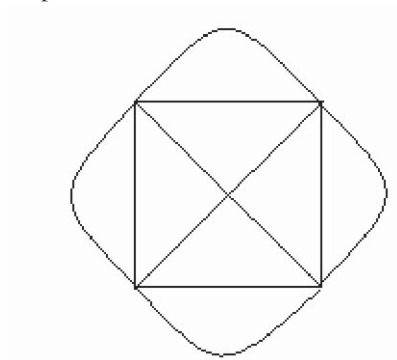
Proof: Suppose there is a path that goes through the graph using each edge once and only once.

Then for all edges except the starting and ending vertices you arrive by an edge and leave by an edge. This means all vertices that are not starting and ending vertices *must* have an even number of edges.

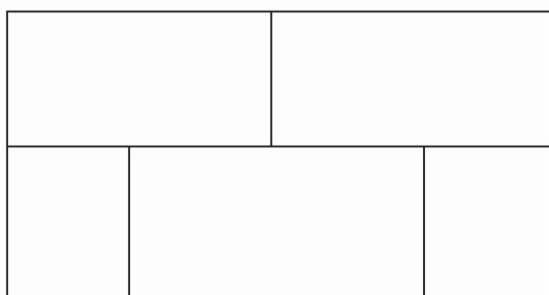
But for the starting and ending vertices, either both must have even number of edges, or both must have odd number of edges. ■

The same technique can be used to solve the following problems:

1. Can you trace the following figure without removing your pencil from the paper or going over one path more than once?



2. Can you draw a curve which crosses each edge of the following figure exactly once?



Bibliography

David W. Farmer and Theodore B. Stanford, *Knots and Surfaces: A Guide to Discovering Mathematics*, University Press (India) Limited, Hyderabad, 1998.

H.R. Jacobs, *Mathematics a Human Endeavor*, W.H. Freeman and Company, San Francisco, 1970.

Joseph Samuel, Crossing Bridges, *Resonance: Journal of Science Education*, Vol. 4 Number 1, January 1999.

Y2 (SMP 11 -16 Series), Cambridge University Press, Cambridge, 1985.

Appendix: Tables and Graphs for Figures 2 - 7

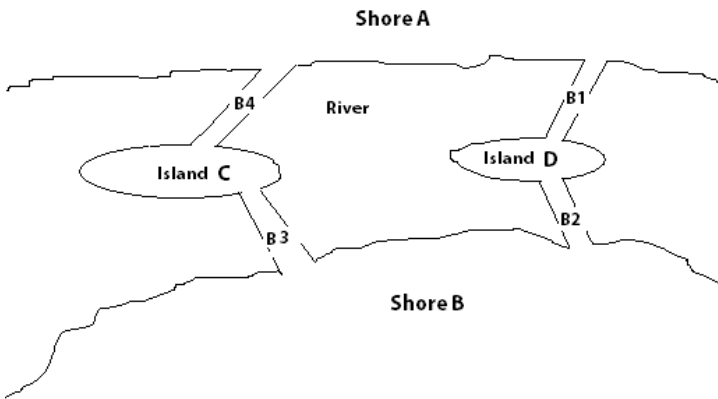
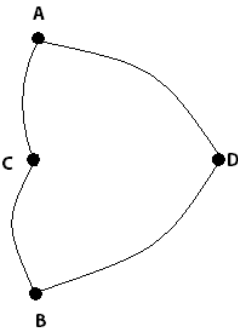


Figure 2



Graph 2

Vertex	No of edges
A	2
B	2
C	2
D	2

Table for Graph 2

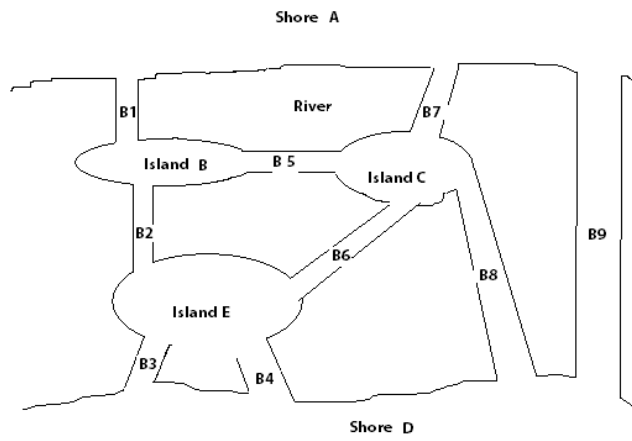
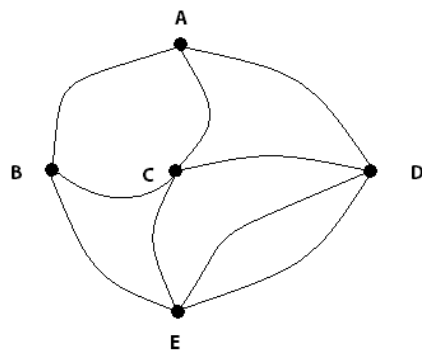


Figure 3



Graph 3

Vertex	No of edges
A	3
B	3
C	4
D	4
E	4

Table for Graph 3

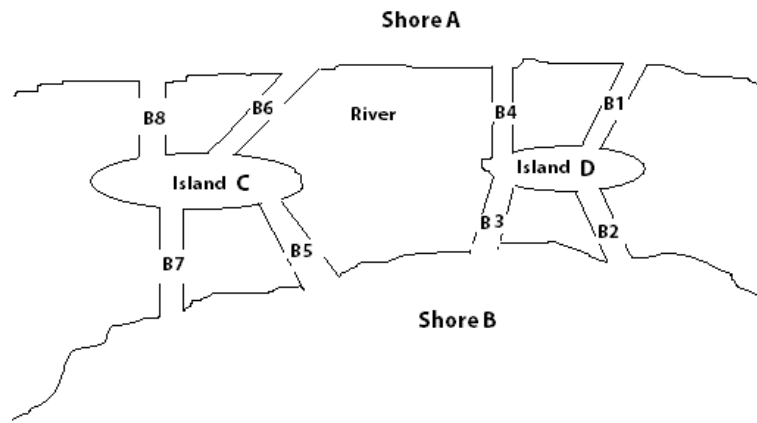
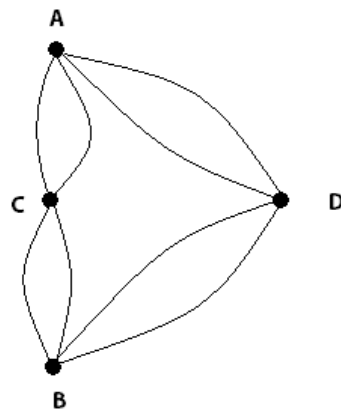


Figure 4



Graph 4

Vertex	No of edges
A	4
B	4
C	4
D	4

Table for Graph 4

